

# West African influence on various projects by Le Corbusier

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This article contributes to the renewed interest in Le Corbusier by exploring a proposition by the African American architect and scholar, Melvin Mitchell, that West African art and architecture had a decisive influence on a number of Le Corbusier's projects. The proposition is explored by means of a matrix that cross-references the three levels of human settlement with three sets of architectural form-giving principles. Since Le Corbusier never acknowledged sub-Saharan sources, the results range from debatable to defensible. It is emphasised that the value of studying Le Corbusier does not so much lie in the tangible forms of his buildings, but rather in the thought processes that informed their conceptualisation and design resolution.

**Key words:** Le Corbusier, Melvin Mitchell, West African vernacular architecture

## **Wes-Afrikaanse invloed op verskeie projekte deur Le Corbusier**

Die doel met hierdie artikel is om 'n bydrae te lewer tot die hernude belangstelling in Le Corbusier se argitektuur deur die stelling wat die Afrika-Amerikaanse argitek, Melvin Mitchell, gemaak het, dat Wes-Afrikaanse kuns en argitektuur 'n deurslaggewende invloed op verskeie van sy projekte uitgeoefen het, te ondersoek. Dit word gedoen deur middel van 'n matrys wat die drie vlakke van menslike nedersetting kruisverwys met drie stelle argitektoniese vormgewende beginsels. Aangesien Le Corbusier nooit bronne uit sub-Sahara erken het nie, wissel die resultate van hierdie ondersoek van debateerbaar tot verdedigbaar. Dit word egter beklemtoon dat die waarde daarvan om Le Corbusier se geboue te bestudeer, nie net in hulle tasbare vorms lê nie, maar ook in die denkprosesse wat die konseptualisering en ontwerpopplossings daarvan beïnvloed het.

**Stelutewoorde:** Le Corbusier, Melvin Mitchell, Wes-Afrikaanse volksboukuns

Up to now the 21<sup>st</sup> century has not been architecture's proudest period. In a recent interview Kenneth Frampton, renowned architectural critic, historian and theoretician, described current architecture as "brutal and barbaric", lamenting that "spaces in contemporary buildings have no quality whatsoever, and depend on the exclusivity of surface and shape" (quoted by Brillembourgh 2010). Clients complain that buildings are not fit for purpose, and engineers complain that architects are becoming deskilled. Many academics embrace vague philosophies of space and place, while rejecting the pragmatism of Christopher Alexander and Le Corbusier (1887-1965) as *passé* or unfashionable.

Le Corbusier's oeuvre has nevertheless been revived as a powerful inspiration for the recent Modernist revival in architecture. A major exhibition of his work at the Barbican Art Gallery in London in 2009 was followed by one at New York's Museum of Modern Art (June to August 2013) and another at the Moderna Museet in Stockholm (January to April 2013). These were not travelling exhibitions; each had its own theme. Equally surprising is that at least ten new books focussing on various aspects of Le Corbusier's life and work have been released in English since the beginning of 2011.

Award-winning South African architect and urban planner, Andrew Makin (comment at his Sophia Gray memorial lecture. Bloemfontein, South Africa, 2006), proclaims that there is hardly any contemporary building of three storeys or higher today that does not include one or more of Le Corbusier's Five Points. Frampton (2002: 1) once remarked: "We shall never finish with Le Corbusier".

Alexander Tzonis and Liane Lefaivre maintain that where his projects have been duplicated, their “dysfunctional aspects” were often emphasised, while “obscuring the critical and programmatic qualities inherent in his work as a whole” (1985: 8). They add significantly:

Seen from this point of view, the work of Le Corbusier remains an unfinished project. His lasting contribution is to have put together a comprehensive modern framework for thinking and for posing the questions out of which many answers to contemporary problems can eventually emerge.

And as Léon Krier declares: “... there is no coherent neo-modernist thinking that, like Le Corbusier’s, is capable of building an authoritative body of theory offering the necessary synthesis of urban planning and land use, on the one hand, and architecture and building, on the other” (1998: 65).

Le Corbusier inspires and informs on so many levels and on every conceivable aspect of architecture, that his oeuvre provides an inexhaustible body for exploration. A previous article entitled “The manifestations of African art in Le Corbusier’s architecture” (Steyn 2013) explored the African origins of “the Picasso-Cubist inspired architecture of Le Corbusier”, referred to by the African American architect and scholar, Melvin Mitchell (2003: 263). This article goes beyond that specific topic and pursues a thesis, also postulated by Mitchell, who claims in his seminal work *The Crises of the African-American Architect* that West Africa shaped Modernist art and architecture through Le Corbusier (Mitchell 2003: 11, 65). Considering the growing importance of many sub-Saharan economies and a concomitant emerging African cultural renaissance, such a proposition simply cannot be ignored.

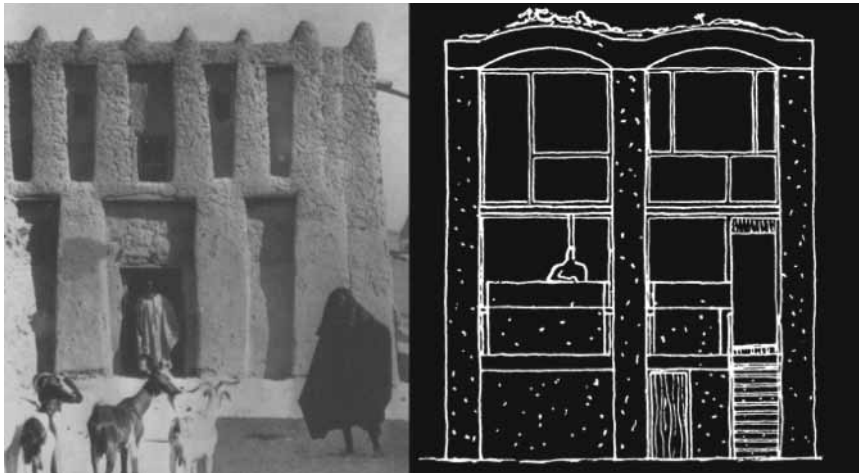
### **Methodology and sources of information**

In spite of Mitchell’s claim, Le Corbusier makes absolutely no reference to West Africa anywhere in his writings. When he mapped his ideas for a world-wide network of cities, sub-Saharan Africa was excluded from this equation, although what could be Ghana was marked with a cross (figure 1). There is, however, no doubt that he was thoroughly familiar with pre-colonial West African art; when he arrived to settle in Paris in 1917 he “cruised” the museums looking at “primitive and prehistoric art – woven carpets and carved idols” (*Giedion 1977: 520*). During the early decades of the 20<sup>th</sup> century the art and artefacts of West Africa were widely referred to as “primitive” and perhaps Le Corbusier (1964: 6) unwittingly revealed his sub-Saharan inspiration when he proclaimed “I seek out primitive men, not for their barbarity, but for their Wisdom”.



**Figure 1**  
**Sketch responding to a question on “rational regionalism” (source: Le Corbusier 1947: 97).**

The simplest way to research the topic would have been to search images for similar forms in literature on West African vernacular architecture to those in Le Corbusier's oeuvre. For example, the houses in Timbuktu, Mali, and the unbuilt residential complex for pilgrims at La Sainte-Baume in Provence (1949) have very similar visual characteristics (figure 2). The walls of La Sainte-Baume were, like those in much of West Africa, of earth construction or pisé (rammed earth) to be more precise (Samuel 2007: 32), and the vaulted roofs were covered with grass. La Sainte-Baume not only emulates the materiality and scale of the vernacular, but because of its roughness and planted roof it seems to have emerged from the earth; quite the opposite of "The cutting off of the building from the land" that Le Corbusier has been so often accused of (Bacon 1967: 217).



**Figure 2**  
**Timbuktu and La Sainte-Baume elevations (sources: Guidoni 1975: 170;**  
**Le Corbusier 1995, volume 5: 33).**

This approach, however, would have been too opportunistic and arbitrary. A framework was needed to guide the search. David Hughes (1994: 8), the African American architect and author (*Afrocentric Architecture: a Design Primer*) states that Afrocentric architecture – which for Mitchell (2003: xi) is synonymous with Le Corbusier's oeuvre – reflects three "principal areas of the built environment": historic precedent, cultural elements and environmental/ecological elements. Hughes' notion of the principal areas was subsequently adopted as search criteria for this study. A morphological matrix was set up by using the three scales of human settlement as the vertical axis to integrate the process by means of cross referencing (figure 3). The resulting nine cross-referenced cells constitute the research framework. Their numbers correspond with the sequence in which they are discussed below.

The matrix was systematically populated by searching for patterns that demonstrate commonality in terms of the search criteria. Since a study such as this necessarily focuses on a comparison of formalistic characteristics, it inevitably contains some speculative choices. Although the matrix was intended to achieve a more rigorous and probing method of investigation, some randomness and value judgement remain unavoidable. An aspect pertaining to value judgement is the fact that we have so become accustomed to 'deconstructivism' and 'blob architecture' that we cannot really appreciate how radically different Le Corbusier's designs and dogma were at that time. Throughout his 50 year professional career he progressed through a number of paradigmatic phases – from the slick, white, floating Purist buildings to

rough, solid, monumental buildings – and each of his projects was unconventional, pioneering and quite different from what was considered to be the popular ideal (figure 4).

		CRITERIA		
		Historic precedent [spatiality, typology, tectonics]	Cultural elements [customs, living patterns and physical artefacts]	Environmental/ ecological elements [climate, geologic conditions and physical features]
SCALE	Buildings and tectonics	1. <u>Rooms in a box:</u> Hausa homestead + UN HQ	2. <u>Courtyards:</u> Dogon/Songhai + Roq-et-Rob	3. <u>Climatic:</u> West Africa + <i>brise-soleil</i>
	Building complexes	4. <u>Composition:</u> Mousgoum + Olivetti	5. <u>Fractal geometry:</u> Patterns + Barcelona	6. <u>Contextual</u> Yoruba palace + Venice Hospital
	Urban	7. <u>Urban squares:</u> Asante + Roq-et-Rob	8. <u>Anthropomorphism:</u> Dogon village + Radiant City	9. <u>Merging:</u> Dogon village + Roq-et-Rob

Figure 3  
The research framework and case studies (source: the author).



Figure 4  
The residential ideals in the 1920s – a Tudor-copy house in a new London suburb (source: Lock 2003: 54).

## 1. Buildings and tectonics/historic precedents

### Buildings as rooms in a box: Hausa compound, Nigeria, an UN Headquarters in New York (1947)

For the design of the UN headquarters in New York (1947) Le Corbusier, although part of a team, played a significant role in developing the concept. While the office towers clearly evolved from the Ministry of Education Building in Rio de Janeiro (1936), the Secretariat (meeting venues) were conceptualised as “rooms in a box” (Gargiani and Rosellini 2011: 107; figure 4). This is the quintessential African compound pattern, as exemplified by the Hausa homestead in Zaria, eastern Nigeria, recorded by Friedrich Schwerdtfeger (1971: 72). The palace of the Assembly in Chandigarh (1958) is another example, although not as obvious. The value of this concept is its inherent flexibility. The interior functions can be adapted to new needs or technologies without compromising the exterior envelope which, because of structural, climatic and aesthetic demands will probably be the most expensive and durable element of the building.

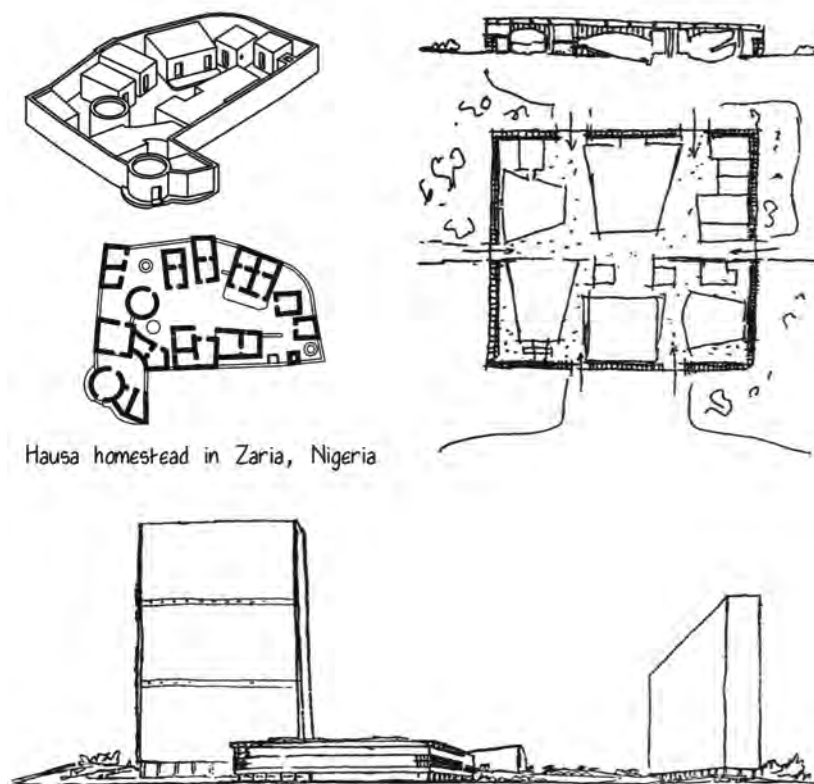


Figure 5

Hausa homestead in Zaria, Nigeria and the Secretariat building of the UN in New York (sources: section and plan from Gargiani and Rosellini 2011: 107; perspective view from Le Corbusier 1995, volume 5: 37).

## 2. Buildings and tectonics/cultural elements

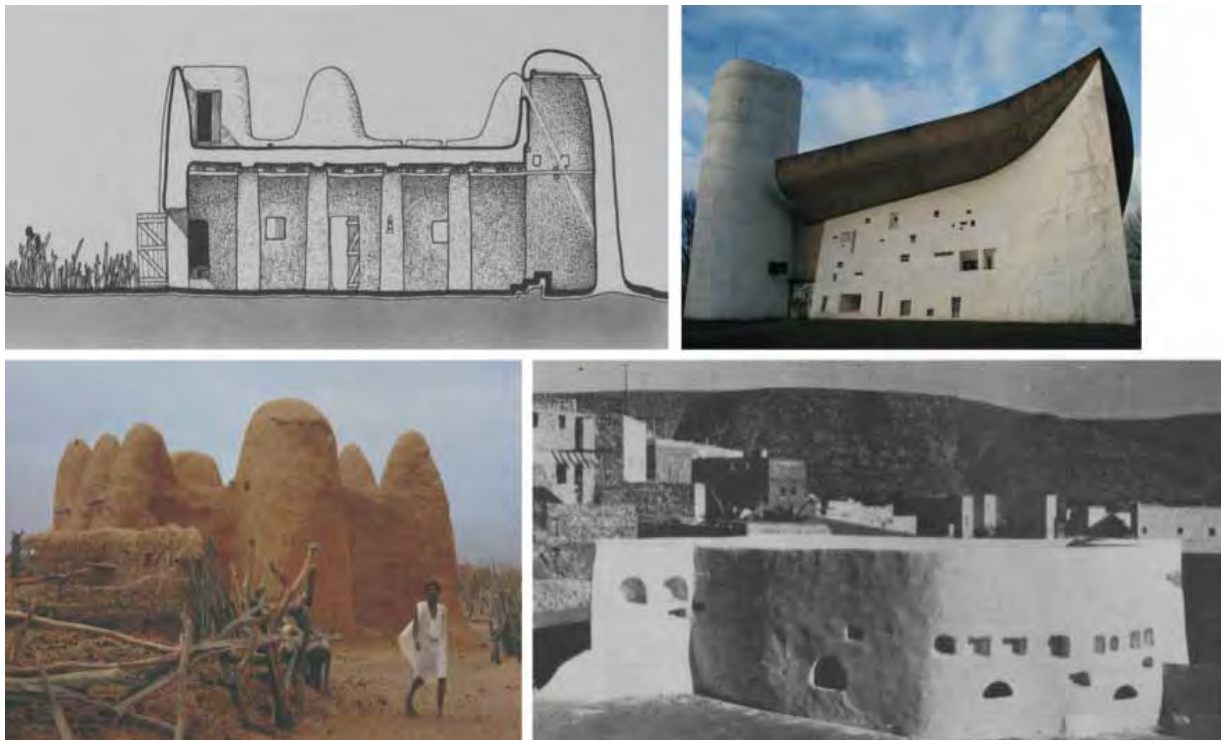
### Courtyards: Tokolor mosque and the Chapel of Ronchamp (1949)

Mitchell (2003: 11, 263) describes the Chapel of Ronchamp – a highly sculptural free form building in concrete – as the ultimate Afrocentric architecture. He asserts that Afrocentric architecture had evolved to its “logical aesthetic conclusion in Le Corbusier’s voluptuously

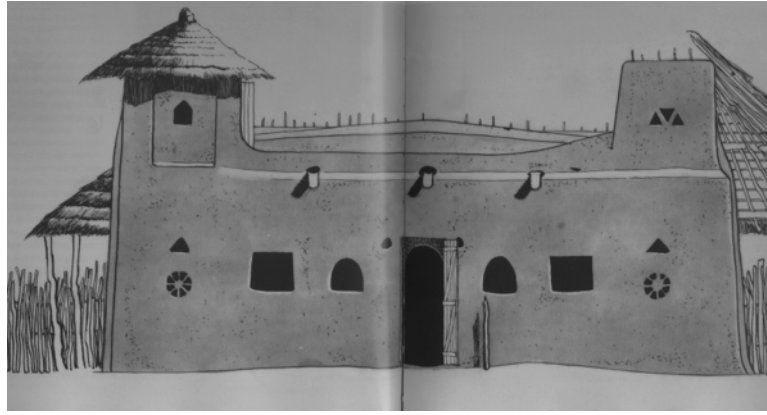
curvilinear Chapel of Notre-Dame-du-Haut” and describes the Chapel at Notre Dame as “openly 1950s West African aesthetic based”. Why?

Here Le Corbusier considered the “question of profiles in the landscape”. In order to resist strong wind the roof was aerodynamically conoid shaped like an airplane wing and early designs in 1951 intended it to be constructed of metal. By 1954 it was decided to build walls, cupolas and roof in béton brut (Gargiani and Rosellini 2011: 127-135). *Oeuvre complete* makes no mention of airplane technology, but rather refers to “the acoustics of the landscape, taking as a starting point the four horizons” (Le Corbusier 1995, volume 5: 72). In later years he would claim that a crab’s shell inspired the shape of the roof (Maak 2011: 16), giving the process a biomorphic rather than technological theme. Danièle Pauly (1985: 35-6) writes that Le Corbusier’s sketches during a trip to the valley of the M’zab in the northern Sahara in 1931 captured essential elements of Mozabite architecture, including how “openings were distributed parsimoniously [sparingly] in the thick walls”. Pauly shows a photograph of a mosque in the M’zab to substantiate this assertion, but says that the architecture did not influence the chapel of Ronchamp directly or consciously, but the “memory” obviously did.

There is some resemblance to West African forms, for example with the Tokolor mosque in Senegal that dates from the 1890s (figures 6, 7). What is striking is that both buildings derive much of their natural interior light indirectly from openings in light wells/towers, a feature also found in Dogon houses (Bourdier and Minh-ha 2011: 130).



**Figure 6**  
**Ronchamp (source: Elan Barr 2007 from <http://architecturewiki.editme.com/lecorbusier>),**  
**Tokolor mosque, Senegal (source: Bourdier and Minh-ha 2011: 131) Mosque in M’zab**  
**(source: Pauly 1985: 36).**



**Figure 7**

**A mosque in Doumga Ouro Thierno, Senegal (source: Bourdier and Minh-ha 1996: 146).**

### **3. Buildings and tectonics/environmental/ecological elements** **Climatic responsiveness: Dogon and brise-soleil**

William Curtis (1986: 115-6) and others suggest that Le Corbusier’s *brise-soleil* was inspired by the Arab *musharabiya* (also called *rowshan*), conceived to ensure privacy for women, although their materiality is too delicate and filigreed to be convincing. However, the modulated wall construction of some building types of the Dogon of southern Mali seems to reflect the much more robust pattern and scale of the *brise-soleil*, as well as the purpose (sun-breaks; figure 8). The high relief is a common feature of vernacular buildings in the hot-dry northern parts of West African (Bourgeois 1996: 75), not only protecting the wall from direct sunlight for much of the day, but also, as René Gardi (1973: 113-4) reports, “the niches are inhabited by ancestors”.

Screens and transitional spaces are found in traditional African architecture for shade, privacy and territoriality, and in some forms of Mediterranean architecture (as loggias), but have been rare in 20<sup>th</sup> century architecture. Of the *brise-soleil* Le Corbusier and De Pierrefeu (1948: 110) comment: “Before the glass skin a further element can be installed, the sun-breaker. An unlimited architectural resource, the key to new architectural riches” (figure 9). Today, however, screens and skins are common elements in contemporary architecture.



**Figure 8**

**Brise-soleil. Dogon dwelling and a proposal for an apartment building in Algiers, 1933**  
 (sources: [http://commons.wikimedia.org/wiki/Category:Dogon\\_architecture](http://commons.wikimedia.org/wiki/Category:Dogon_architecture);  
 Le Corbusier 1960: 109).

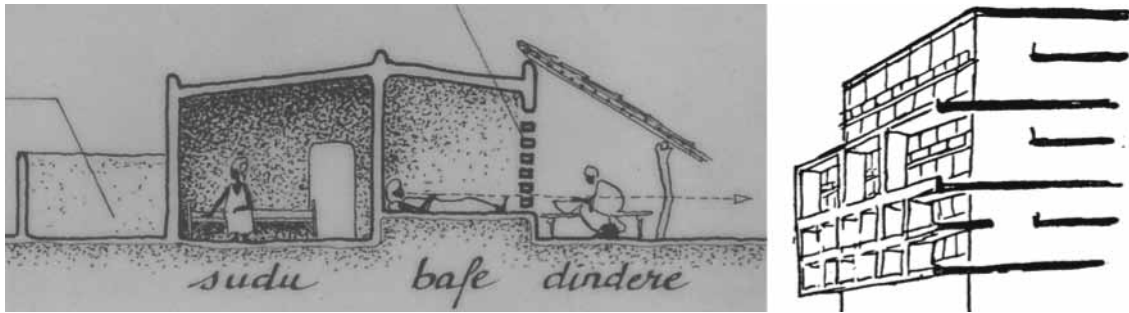


Figure 9

Section through Tokolor house and Le Corbusier's sketch explaining sun-breakers and glass skins (sources: Bourdier and Minh-ha 1996: 86; Le Corbusier and De Pierrefeu 1948: 110).

#### 4. Building complexes/historic precedent

##### Composition: Mousgoum homestead and Olivetti Centre (1962)

Christopher Alexander (1964: 30-1), well known American architect and author, refers to the African mud hut as a “recognised example” of a good fit between form and context, as well as of clarity of organisation. He was referring to the Mousgoum “mud castles” of the Cameroun, well known because of their sculptural forms (figure 10). The Olivetti Electronic Centre was intended to be built near Milan (figure 11). Superimposed on the controlled Euclidean geometries of the L-shaped workshop podium block and research laboratories in ten-storey slabs, the main entrance, restaurant library and other social facilities are accommodated in an organic free-form arrangement that is reminiscent of a number of iconic African compounds with their central cores, all connected by curved pathways (figure 12). The pod-like spaces in particular, resemble Mousgoum homesteads on plan. Interestingly, their sectional profiles show sculptured, scalloped roof shapes (figure 13).

Contrasting plan forms and differentiated spaces and volumes can make way finding in a big building considerably easier. This concept can also reduce the intimidating effect of unfamiliar, monolithic tectonics so characteristic of some institutional buildings.

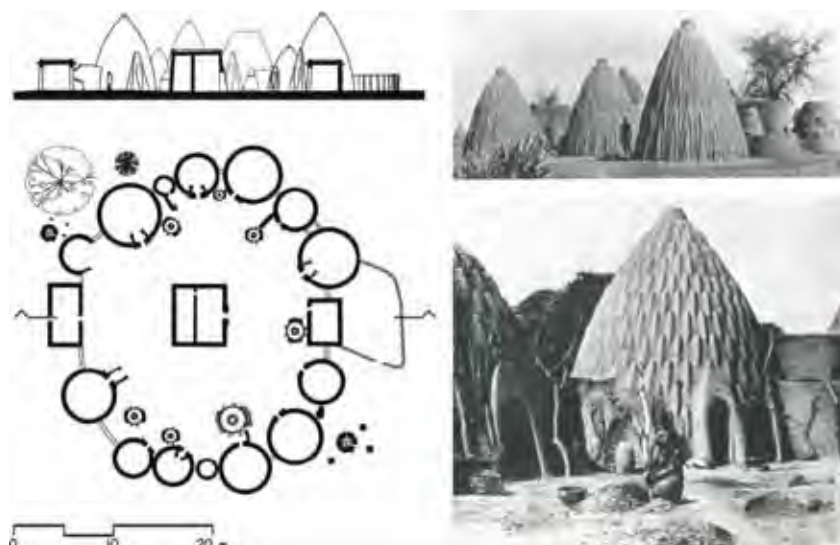
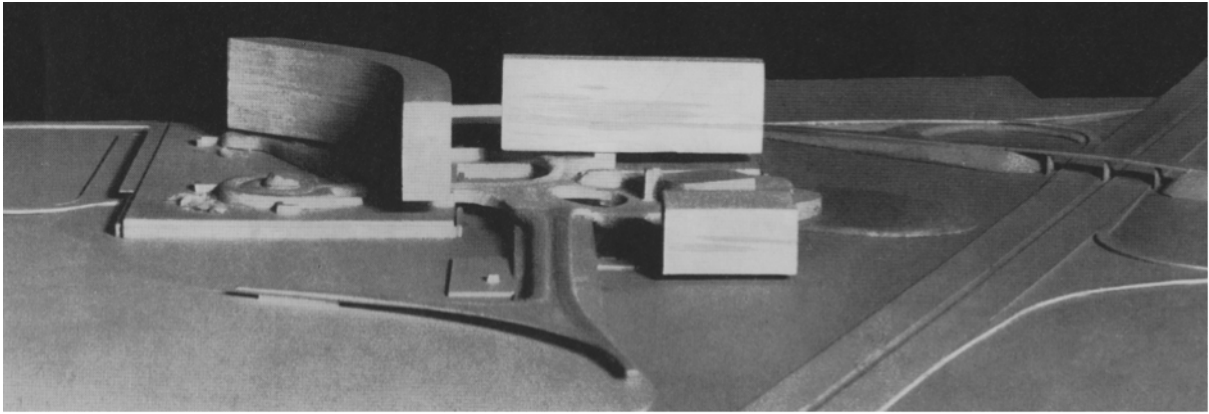


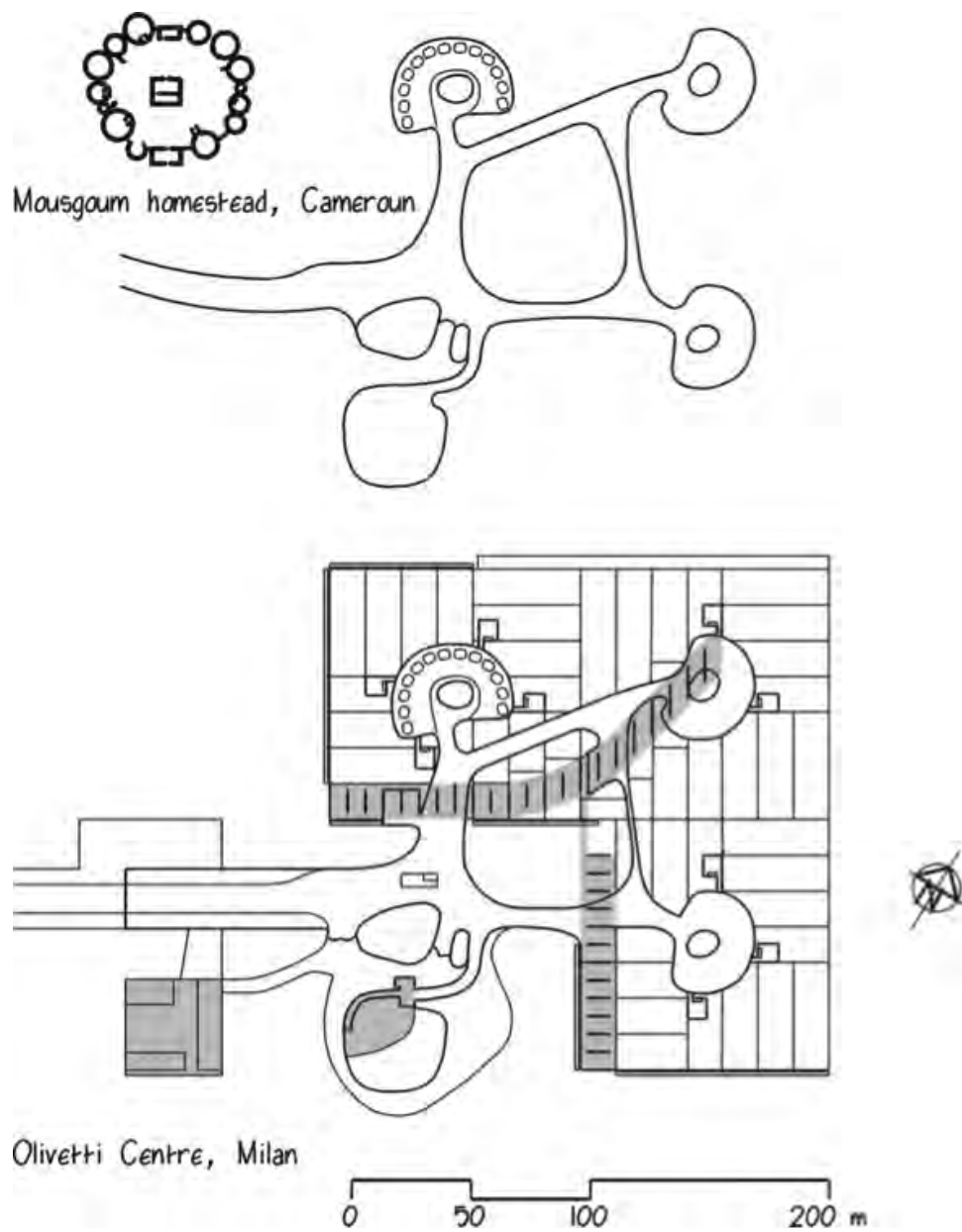
Figure 10

Mousgoum homestead, Cameroun (sources: drawing by the author after Fraser 1868: 53; photos from Guidoni 1975: 133).

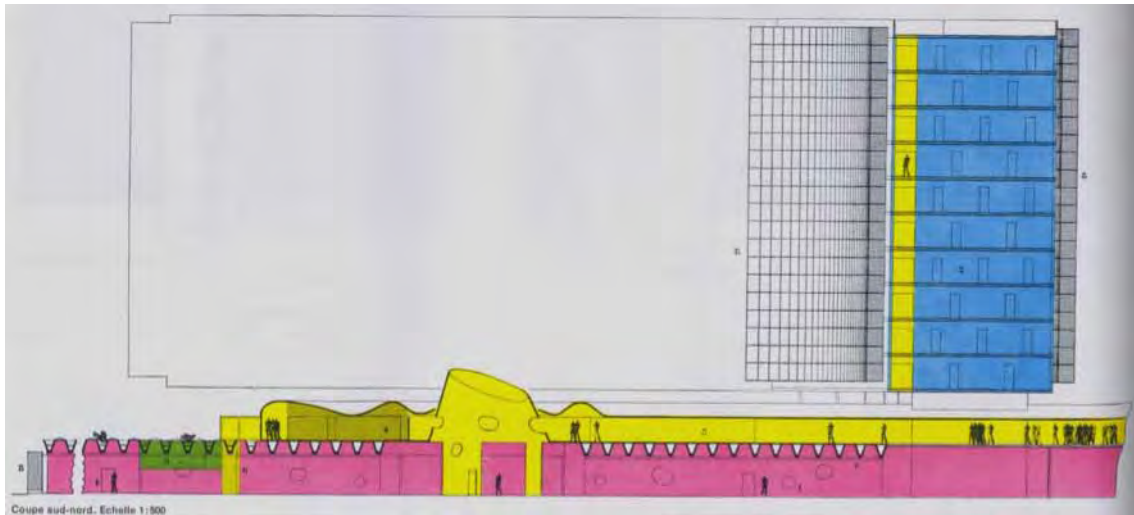




**Figure 11**  
Olivetti Centre (source: Le Corbusier 1995, volume 7: 124).



**Figure 12**  
Mousgoum homestead and plan of Olivetti Centre (drawings by the author).

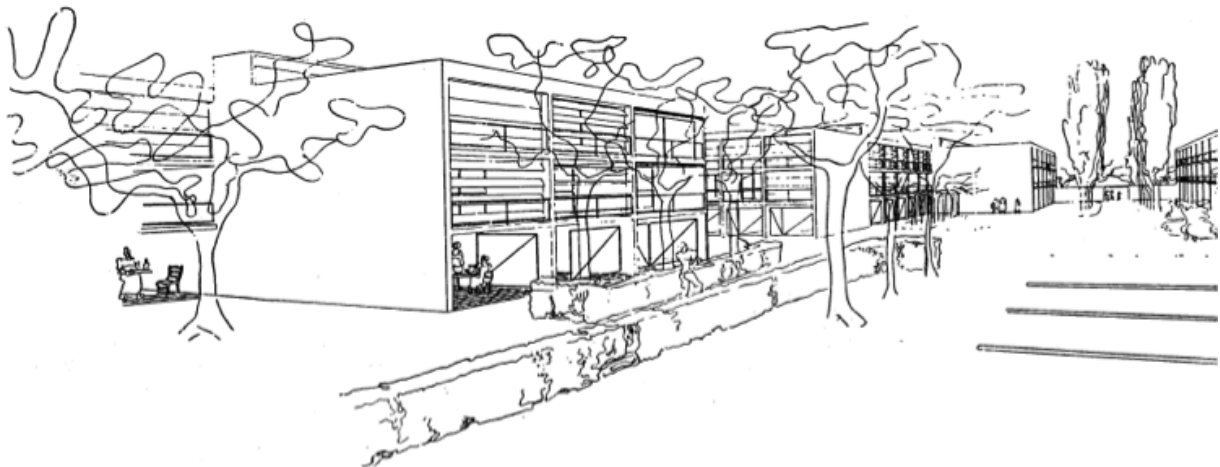


**Figure 13**  
Section through Olivetti Centre (source: Le Corbusier 1995, volume 7: 128).

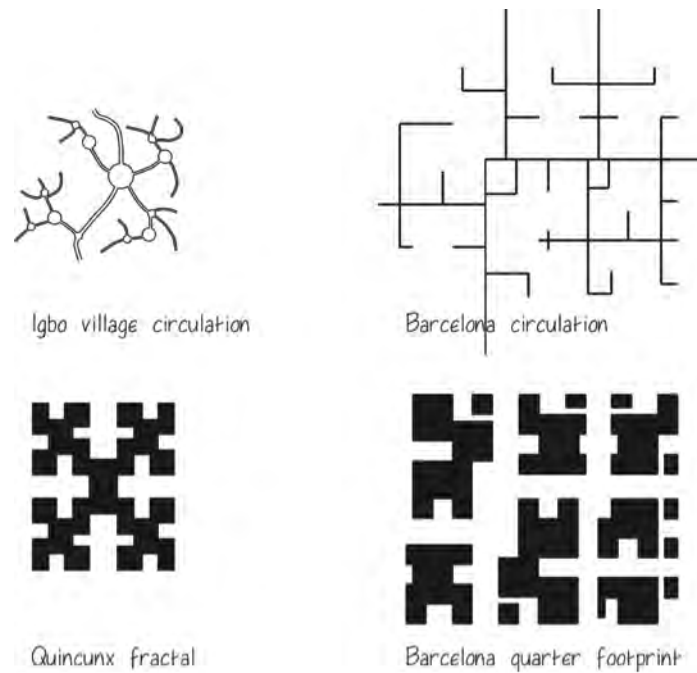
## 5. Building complexes/cultural elements

### Fractal geometry: Barcelona Workers' Quarter (1933)

Although Michael Batty and Paul Longley's *The Fractal City* was published only in 1994, two fractal modes are evident in Le Corbusier's site planning in 1933 for workers' housing in Barcelona (figure 13), the one being the hierarchical circulation pattern that is very similar to that of a ksour in the M'zab (which he visited) and also that of a typical rural West African village (which he did not; figure 14). Richard Hull (1976: 47) describes the "astonishingly efficient use of space" achieved by the Igbo in Nigeria through clustering (figure 15). This pattern is called "branching fractals" by Ron Eglash (1999: 34). The other is the *quincunx*, a fractal pattern found as decoration in Senegal (Eglash 1999: 55). Fractals constitute a fascinating (and visually spectacular) mathematical concept, but they are probably still undeveloped as urban design tools. However, because of the resulting hierarchical scaling it is a subtle way of creating semi-private/semi-public spaces and defining territory without overtly excluding strangers.



**Figure 14**  
Barcelona workers' quarter, 1933 (source: Le Corbusier 1995, volume 2: 197).



**Figure 15**

**Fractal patterns and the Barcelona workers' quarter (drawings by the author).**

## **6. Building complexes/environmental/ecological elements**

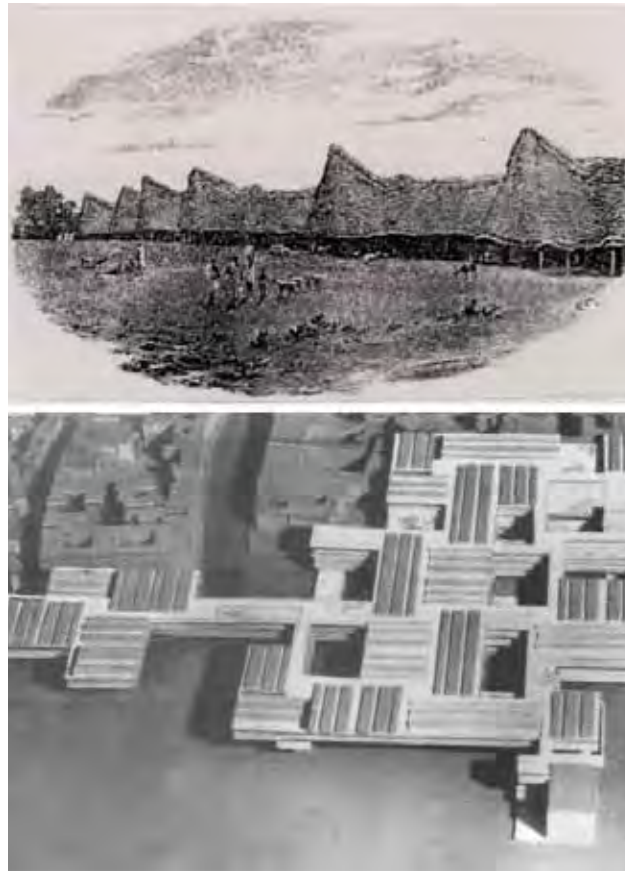
### **Responding to the physical context: Yoruba Palace and Venice Hospital (1964)**

Douglas Fraser (1968: 43) describes Yoruba town planning as “among the most elaborate in Africa south of the Sahara”. The region is not known for its big buildings, but with a footprint of 2.4 hectares for the palace of the *Oba* (king) in Oyo, this complex, typical of Yoruba royal compounds in Nigeria, must be one of the largest. Set in an 8.1 hectare walled precinct, the courtyard typology, materiality and tectonic form are similar to that of the surrounding fabric; the spaces are all just considerably bigger.

With a base coverage of 3.0 hectares the scheme for the Venice hospital, on which Le Corbusier was working before his death, was not much bigger (figure 16). Charles Jencks insists (2000: 325) that this complex “has many of the complex, urban aspects which his critics were asking for”, including respect for the context. Tzonis and Lefaivre add (1985: 7) that it responds to “a growing demand for a low-profile architecture capable of being integrated into the existing urban fabric”. Designed in 1964, this envisaged (but unbuilt) new hospital was planned for 1 200 beds, and was configured in four levels with courtyards and a regular circulation grid. It is interesting that in *Euvre Complète* (Le Corbusier 1995, volume 7: 140-9) the model and all the site plans show the existing surrounding fabric. The horizontality, narrow lanes and courtyards of the existing fabric inform the concept as its major morphological elements. However, unlike the vernacular Yoruba builders, there is less need to replicate existing materials in the 20<sup>th</sup> century and the Hospital is built with reinforced concrete. It possesses some fractal qualities since the grid is centrifugal and can be endlessly incrementally “spun” out (figure 17).

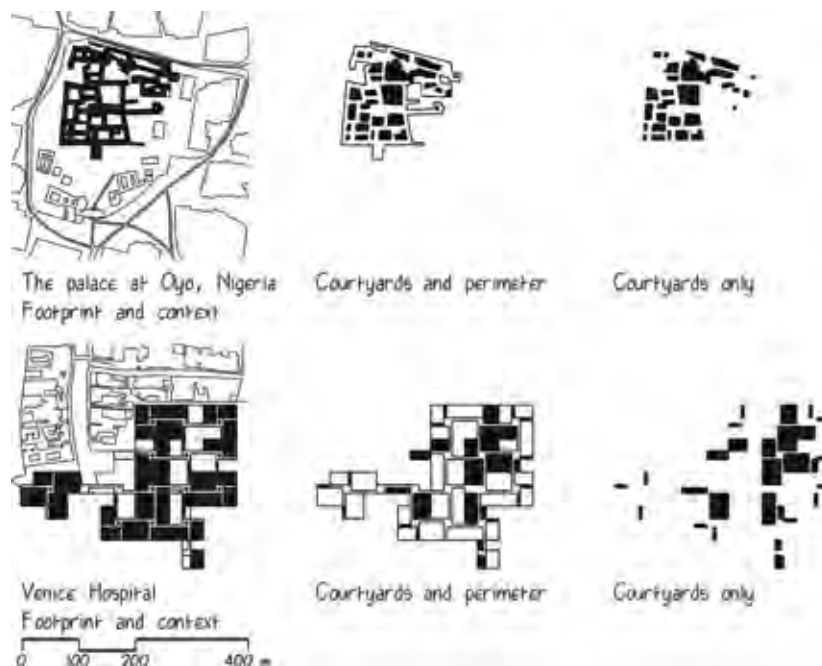
Interestingly, he now had the opportunity to emulate the introverted pattern (figure 18) he sketched at Ben-Isghem in Mauritania and commented on as being “well-filled shells” and “within: a poem” (Le Corbusier 1964: 232). Nowhere did Le Corbusier pursue the courtyard

theme so conclusively and boldly. The Venice Hospital is an example of a large carpet building, on many sites an appropriate alternative to towers for large institutional complexes.



**Figure 16**

Below: Venice Hospital (source: Le Corbusier 1995, volume 7: 146). Top: Oyo Palace in the late 1890s ([http://apollo5.bournemouth.ac.uk/africanlegacy/old\\_oyo.htm](http://apollo5.bournemouth.ac.uk/africanlegacy/old_oyo.htm)).



**Figure 17**

Site plan of the Venice Hospital and the palace at Oyo, Nigeria (drawings by the author).

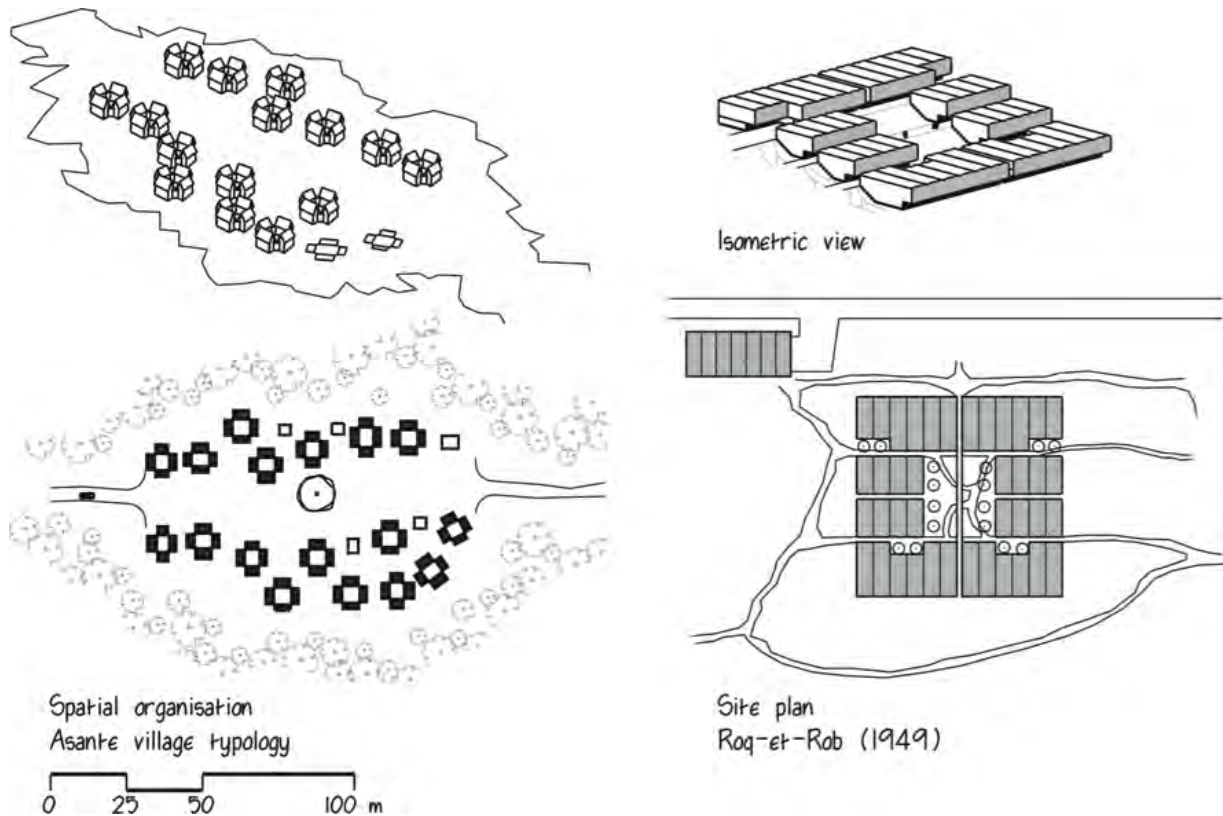


**Figure 18**  
**East elevation of the Venice Hospital, showing the windowless façade (source: Le Corbusier 1995, volume 7: 146).**

## 7. Urban/historic precedent

### Urban squares: Asante and Roq-et-Rob (1949)

Andrew Rutter (1971: 161-62) points out that Asante settlement planning is based on “a main street pattern whose axis east-west or north-south had religious significance”, and that in smaller settlements “a simple pattern based on a single main street was sufficient”. The market square in the centre is social space in every sense. Unlike Islamic cities such as Timbuktu and Djenné, the layout of the rural villages in Kumasi’s hinterland is codified around the precepts of axes and a centre. This is also the organisational pattern Le Corbusier applied for Roq-et-Rob (figure 19). His unquestionable preference for collectivism – also embedded in African culture – is evident here in the generously-scaled centralised communal courtyard (accessible from eight directions) surrounded by private dwellings with courtyards as family sanctuaries. Although the ideological meaning has been lost, the social and psychological values of this hierarchical arrangement of courtyards remain relevant.



**Figure 19**  
**Asante, Roq-et-Rob and communal space (drawing by the author).**

## 8. Urban/cultural elements

### Anthropomorphism: Dogon Village and Radiant City (1930)

Radiant City, a hypothetical project for Moscow (Le Corbusier 1964: 124) was exhibited at the Brussels Conference of CIAM and although he explains and motivates all aspects of the design in considerable depth, Le Corbusier is totally silent about the anthropomorphic layout claimed by Maurice Besset (1987: 167). Besset does not identify the source of the illustration listed as “Sketch of the Radiant City”, but as a former administrator of the Foundation Le Corbusier in Paris he certainly had access to unpublished material. Anthropomorphism is rare in Western architectural dogma, but intrinsic to many African ideologies, like that of the Dogon in Mali as described by Fraser (1968: 51, figure 20).

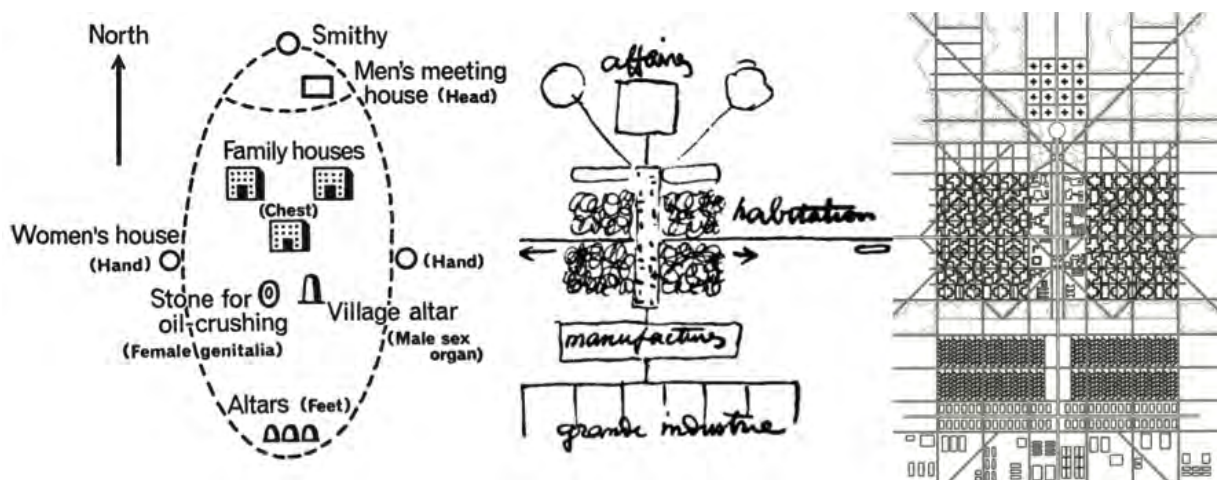


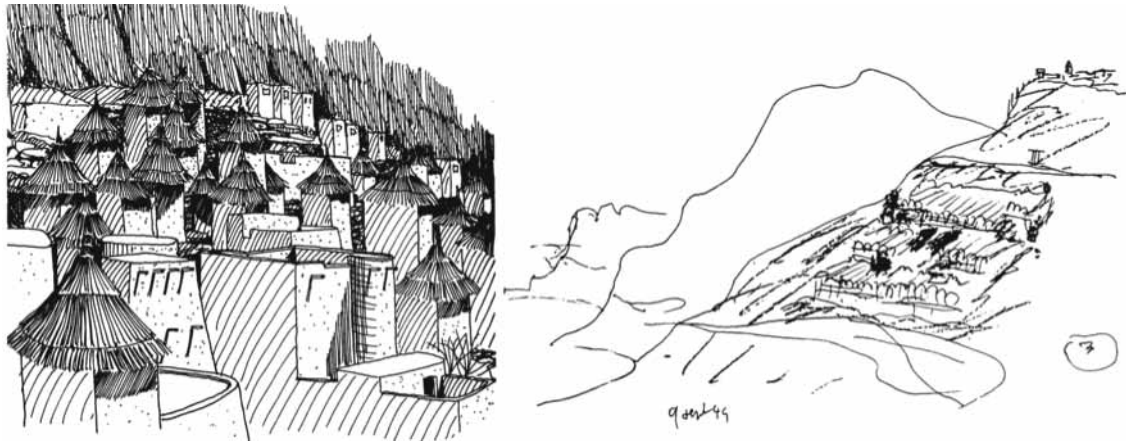
Figure 20  
Anthropomorphism in urbanism (sources: Fraser 1968: 51; Besset 1987: 167).

## 9. Urban/environmental/ecological elements

### Merging/respecting the site: La Sainte-Baume (1948) and Roq-et-Rob (1949)

The French Coast projects, La Sainte-Baume on the Côte d’Azur (1948) and Roq-et-Rob at Cap Martin (1949), are two of Le Corbusier’s unbuilt carpet schemes – low, contour-hugging structures that cover the landscape like a crust. Besset (1987: 126) comments on this transition to formless architecture, referring to the “outspread structure strictly governed by those natural forms”. These “stepped clusters of contiguous dwellings” are typologically identical to the cliff-type Dogon villages of Mali, so succinctly described and illustrated by Norbert Schoenauer (2000: 64-6; figure 21). In both instances the building clusters merge and blend with their site and respect the topography. In many respects Le Corbusier’s carpet projects, and Roq-et-Rob in particular, preceded Critical Regionalism by many decades. To quote Pallasmaa (2007: 137):

The [Second] Modernism frequently expresses gravity and stability and a sense of materiality and earth. The return of earth and gravity as expressive means of architecture has more than metaphoric meaning; after its arrogant and utopian journey, architecture has returned to the safety of Mother Earth, back to the sources of rebirth and creativity.



**Figure 21**

**Dogon village and Roq-et-Rob (sources: Schoenauer 2000 : 66; Le Corbusier 1995, volume 5: 54).**

## **Conclusion**

From Le Corbusier's travel notes and sketches we know that he was impressed by Greco-Roman and Turkish architecture, but it was during his visits to North Africa that the Kasbah in Algiers and the fortified villages in the M'zab made him appreciate the value of the more rugged and textured North African vernacular. The architectural forms of the Maghreb are derived from the Middle East via Islam, and since a number of authors, including the authoritative Kaizer Talib (1984: 47), recognise a typological relationship between Middle Eastern and African dwellings, it can be suggested that the representation of West African patterns in Le Corbusier's work is purely coincidental. To avoid that burden of proof this article refers to similarities simply as "reflections" and not "inspiration"; it suggests phenomenological similarities, rather than claim deliberate connections.

Le Corbusier's exposure to the vernacular unquestionably convinced him that the traditional indigenous forms are not as 'unplanned' as generally perceived. As an avid reader and probing researcher, there is the possibility that he might have tracked the vernacular from the Kasbah in Algiers, to Ben-Isghem in the M'zab and from there across the Sahara to the Sahelian towns and further south along the trading routes into the Forest Zone. Le Corbusier employed a somewhat contentious form of Critical Regionalism in the way he reinterpreted and applied traditional local elements totally stripped of their cultural underpinnings in another region and context.

He considered the Indian climate quite a challenge to the point where he felt compelled to develop the Climatic Grid in order to be able to respond architecturally in an adequate manner. In fact, Curtis (1986: 115) reminds us, Le Corbusier's "regionalism was not so much cultural as climatic". Mitchell (2003: 16) believes that Ghana is the cradle land of Corbusian-inspired modernism. Actually, Maxwell Fry and Jane Drew, who joined Le Corbusier at Chandigarh in 1951, worked in Ghana and studied local vernacular patterns, writing the seminal *Village Housing in the Tropics – with Special Reference to West Africa* (1947). It is not inconceivable that they shared their expertise with him. Just like Le Corbusier they appreciated the Ghanaian vernacular not for its cultural appropriateness, but for its climatic responsiveness.

The intrinsic characteristics of the West African vernacular are reflected in Le Corbusier's oeuvre in many other ways including: site and contextual sensitivity; optimal land-use intensity without compromising private outdoor space; privacy gradients through hierarchical spatial

progression; the sensibility of earth construction; and the emotional reassurance of earthy textures and colours.

The wide range of sources and methods Le Corbusier employed to inform his design concepts is well known and widely recorded, including setting-out geometry, proportions, biology, analogies from nature, historical and vernacular precedents, ideas from his contemporaries and formative ideas from every historical age, from antiquity to the futurists. Le Corbusier was always elusive about the true inspirations for his design concepts; as Adolf Vogt (2000: x) wittily declares, Le Corbusier was good at covering his tracks! My argument is that West African art, including architecture and artefacts, was for him a 'secret' source of formative ideas that he mined for creative ideas that allowed him to consistently produce unique and surprising architecture.

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