Transformation of Vernacular Housing by the Displaced: Greater Khartoum, Sudan.

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Abstract

A country of great variations in terms of climate, topography, culture and norms, Sudan has passed through a number of crises that caused mass population movements from rural to urban areas. Displaced people usually move with their cultures, traditions and local experiences. They settle in and around cities utilizing their previous building knowledge and experiences, then gradually start to adopt new forms and building techniques along with the changes that happen to their economic conditions that is usually manifested in the transformation of their traditional homes and neighborhoods into new ones.

This paper focuses on the transformation of the traditional house form and neighborhood layouts of internally displaced persons (IDPs) who resettled in Greater Khartoum, Sudan, to forms that resemble a mixture of different cultures, materials, and economic conditions. The paper traces the reasons that led to this transformation and what roles do different actors, viz. architects and government officials play to integrate the basic principles of vernacular housing with the contemporary architectural language of the city.

The paper is based on a field research carried out by the authors in Greater Khartoum. Data was collected through observation and personal interviews with a randomly selected sample of displaced households, community leaders, and public officials.

Keywords: Greater Khartoum, housing transformation, internally displaced people, Sudan, vernacular architecture.

Introduction

Before its split into two independent countries, Sudan and South Sudan in 2011, Sudan used to be the largest country in Africa with some 2.5 million square kilometers in area. Since then, it has lost that status but remains one of the large countries on the African continent with an area of about 1.86 million square kilometers. It borders the Red Sea, Eritrea, Ethiopia, South Sudan, Central African Republic, Chad, Libya, and Egypt (Figure 1).

Fig. 1: Map of Sudan
Source: www.worldatlas.com 05.05.2014 08:50

Most of the 30 million inhabitants of Sudan enumerated in the 2008 population census live along the river Nile and its tributaries as well as on the alluvial plains of central Sudan where the climate is conducive to rain-fed cultivation and livestock rearing. The desert occupies a large area of northern Sudan thus limiting the area suitable for cultivation and habitation to a narrow strip along the Nile banks. With about five million inhabitants in 2008, Greater Khartoum is the political and economic capital and the most densely populated city in Sudan. It is situated at the juncture of the White and the Blue Niles that forms the legendry Nile River and comprises the three cities of Omdurman, Khartoum and Khartoum North (Figures 2 & 3).
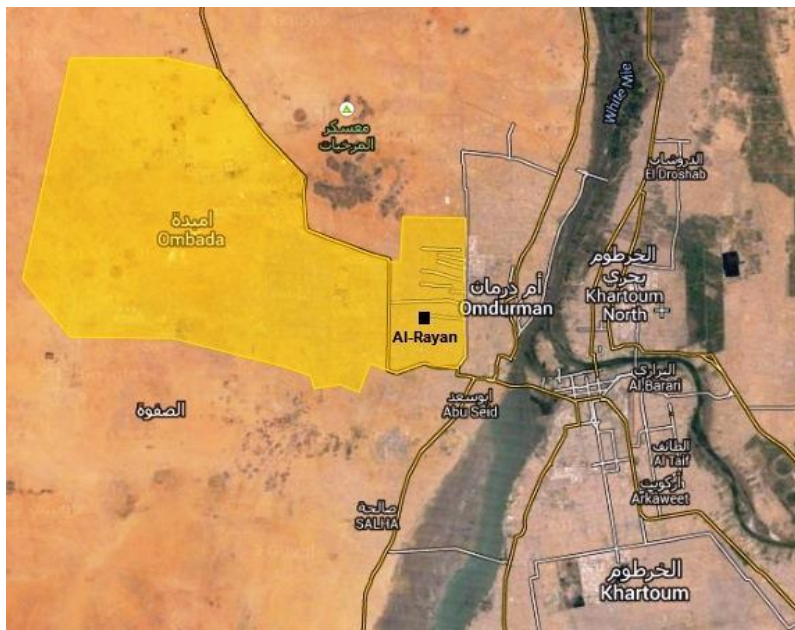

Fig. 2: Umbadda Locality and Al-Rayan Neighborhoods
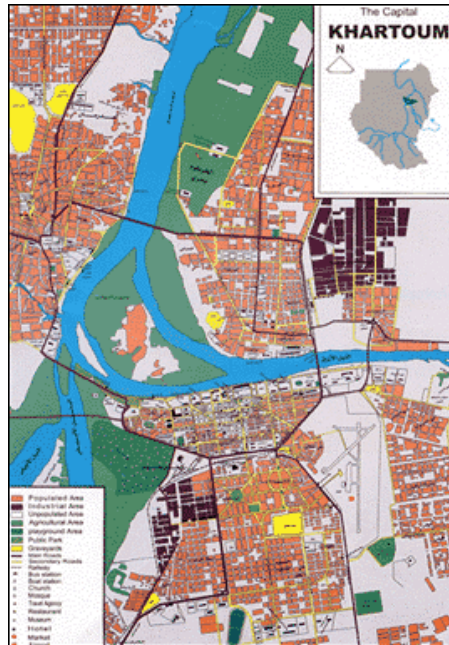Source: www.wikimapia.org 15.06.2014 10:07

Fig. 3: Map of Greater Khartoum
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Sudan lies between the Arab zone of North Africa and the African zone of central Africa. These neighboring sub-cultures, along with the great difference in climatic conditions and topography has given the country a great diversity of cultures, traditions, norms, and building materials that created great variations in traditional house forms and neighborhood layouts. Generated over centuries by lay people without the intervention of professionals, the resultant vernacular architecture has great diversity as will be discussed later in this article.

According to this variation in culture and traditions, Sudan can be divided into five zones that have different house forms and neighborhood layouts (Eltahir,1997). (i) North Sudan, which is occupied mostly by Nubian tribes who sustained their culture over thousands of years mainly along the Nile; (ii) western Sudan, which is comprised of two different zones: the northwestern part that has strong Arab influence and the southwestern part that has African influence; (iii) eastern Sudan, which is inhabited mainly by nomadic and sedentary tribes such as the *Beja*, *Hadandawa, Rashaida*, etc.; and (v) central Sudan which is effectively a social melting pot and the granary of all of Sudan.

For different reasons ranging from famine, drought, civil war and lack of medical and educational services and economic opportunities in some rural areas, people have taken refuge in Greater Khartoum. Those internally displaced persons (IDPs) usually move to Khartoum *en masse* depending on relief during their first months of arrival with the hope that they would return home when the reasons for their displacement dissipates. However, as documented by Hamid (1997), most of those IDPs remain indefinitely in Khartoum and never return home. Most of them form informal housing settlements around the city using their traditional building techniques and recycled building materials. Such settlements have untidy structures and narrow and winding alleys, with donkey-pulled carts serving as the main mode of transportation (Hamid, 2001). Others who have better resources moved gradually into the city adapting some of the existing housing stock that they could buy or rent so that it suites their social needs, culture, tradition and norms. A high percentage of people are not educated and only a minority has a level of primary education. Only a few of them have higher education.

Scope and Research Methods

This paper focuses on the transformation of vernacular houses and neighborhoods of IDPs in Greater Khartoum, Sudan, with a focus on *Umbadda* Locality, one of the most densely populated and rapidly expanding districts of the capital city. The paper identifies the transformations that occurred as a result of IDPs migration to the city by examining a number of criteria: the stages of transformation that took place in the area; reasons for this transformation; the effects of building by-laws and government interference in illegal settlements on these vernacular neighborhoods and houses. The paper also discusses the potential of the resultant housing as physical forms that enhance social interaction among neighbors. This was accomplished and examined through in-depth interviews with community leaders and public officials, personal observations and analysis of a sample of 50 households randomly selected from *Umbadda* Locality.

Objectives

The objectives of this paper are:
- To develop a framework for understanding the different cultural and social traits that help IDPs interact together and develop their neighborhoods.
- To explore the political and social strategies that help IDPs in informal settlements assimilate in local contexts, which will facilitate their smooth integration into the urban social life, satisfy their needs and desires, and help them build social ties that reduce conflicts between different social groups.

Vernacular Houses of Internally Displaced People

As defined by Frank Lloyd Wright, vernacular architecture is "folk building growing in response to actual needs, fitted into environment by people who knew no better than to fit them with native feelings" (Wright in Oliver 2007). Vernacular architecture also refers to spontaneous architecture that has been developed over the years by lay-people without the intervention of professionals. According to Oliver (2006), the term vernacular is a linguistic one, and when it is applied to architecture, it becomes a part of the familiar linguistic analogy of "architecture as a language of form", and vernacular architecture can be said to be "the architectural language of the people" with its ethnic, regional and local dialects.

Therefore, when people move suddenly to Greater Khartoum forming new settlements, they move with their traditional architectural forms, culture, norms and knowledge. Vernacular houses that were built by displaced people in Greater Khartoum could be divided into four types:
1. Vernacular houses built at the periphery of the city (Figure 4).
2. Vernacular houses built in re-planned areas within the city (Figure 5).
3. Vernacular houses built on vacant plots in new urban neighborhoods (Figure 6).
4. Vernacular houses in old unplanned or semi-planned areas that surround Khartoum and have been incorporated into it in recent years (Figure 7).

For the purpose of this paper, we will discuss only the transformation of vernacular architecture built by internally displaced people in re-planned areas of Greater Khartoum taking *Umbadda* Locality as a case study.

Fig. 4: Makeshift settlements built by IDPs at the fringes of Greater Khartoum

Fig. 5: Extant villages surrounding Greater Khartoum represent one of the favorable housing options for IDPs

Fig. 6: IDP shacks constructed of recycled building materials (jute sacks, cardboard and straw mats) on vacant plots amidst high-income residential areas

Fig. 7: Perishable IDP shelter. Tree logs are used as firewood as well as for housing supports and rafters adding to deforestation

Vernacular architecture in Re-planned Areas around Greater Khartoum

Since the mid-1980s, IDPs have moved to Greater Khartoum *en masse* due to natural and/or manmade disasters (viz. civil wars, insecurity, etc.) creating large IDP camps and illegal settlements around the city (Figure 8). Invariably, they have built shelters using their pervious knowledge; thus creating neighborhoods that have similar characteristics to their former traditional neighborhoods (Figure 9). These areas have since been re-planned by concerned local authorities and relevant ministries.

One of these settlements was located west of Omdurman adjacent to the desert in an area called *Umbadda*. Umbadda was established in the 1880s as residence for transient herders and livestock traders and grew during the 1940s upon receiving a small number of herdsmen who had been evacuated from Omdurman province for hygienic reasons when they insisted on living with their livestock (Agraa and Shaddad, 1988).

The authors' access to the area was facilitated through the local popular committee office in Umbadda Locality that provided necessary information about the neighborhood, and introduced us to a member of the Popular Committee who lived and worked in the same area. According to the questionnaire carried out in Al-Rayan neighborhood of Umbadda in the summer of 2009, 92% of the population was of Nuba tribe who migrated from the Nuba Mountains region in southwestern Sudan[1], and only 8% were from other regions of Sudan who came to live in the area after its re-planning (Eltahir, 2008).

The Nuba are one of the largest of many non-Arab groups in the southwestern part of Sudan. These tribes have their similarities and differences, which cover more than one aspect such as cultural and linguistic characteristics. Differences in their traditional architecture is not an exception, and the variations are not just in the building materials, but also in the way each group uses the different types of huts.

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[1] The Nuba Mountains comprise about 99 hills. Tribal groups that live on and around a hill are identified by it. This created many inter-tribal differences between them

Fig. 8: An IDP camp in Umbadda before its re-planning

Fig. 9: An example of IDP houses built of mud and thatch

The Nuba have moved to Greater Khartoum at different times; some moved during the Mahdia's regime (1885-1898) and lived in some parts of the city for several decades. Others moved during the late 1960s and after the mid-1980s because of droughts and famines. They lived in squatter settlements within the city, and the rest of them moved directly to Umbadda which was then a rapidly growing informal settlement. Those who moved to the city first, then relocated to Umbadda and gained a new housing experience because of mixing with other tribal groups and by experiencing the city life longer than others, unlike the late-comers who moved directly to Umbadda.

As a family member or tribal group moves to a place and finds it convenient, he would encourage other family and tribe members to move to the same place. This created distinct residential zones formed along tribal relationships, with narrow winding streets, and wider streets that separate the different zones from each other, with a big open space outside these

settlements used for their traditional wrestling and Kampala dance[2]. This layout is almost the same layout they have developed in the Nuba homeland where huts are arranged in such a way that forms an outdoor circular area used to perform their traditional Kampala dance and wrestling.

Social Situation

About 54% of the households in al-Rayan neighborhood were single family households, some of them had lost their male heads (husband, father, etc.) due to civil wars or had deserted the family altogether, which disrupted their social situation, that had already been aggravated by losing their livestock due to disasters in their homelands. Most women in this part of Umbadda are rather aggressive and perform triple roles similar to those assumed by rural women: a) a productive role as income earners, b) a reproductive role that included bearing and rearing children, c) a community management role (Moser, 1988).

Neighborhood Description

Al-Rayan neighborhood has residential plots, wide roads, and vacant plots reserved for services, and open spaces. The place reflects a great deal of poverty which spreads its wings all over the neighborhood, but was much evident in the house forms where a number of them are without boundary walls; others have low walls built with mud bricks, most houses have one or two rooms, and a rakoba[3].

In a marked departure from the socio-cultural needs of its Nuba inhabitants, the planning of Al-Rayan neighborhood did not include open spaces for practicing the traditional Kampla dance and the weekly wrestling ritual. This forces them to travel long distances to places where these traditional activities are performed.

In spite of the recent re-planning of the area, there are still various examples of informal structures; e.g. a zawia[4] was built in the middle of a communal open space while a number of houses encroach upon the streets. Many of those additions are pit latrines that protrude outside the house and onto the streets. Those were just some examples of non-compliance with the building by-laws that stem from their previous life in rural areas where there are no such by-laws.

House Forms in Al-Rayan:

House forms in this area of Umbadda have passed through at least two stages:

a. House forms before re-planning: During their early settlement in Umbadda as squatters, the Nuba IDPs felt insecure, uncertain, and had only minimum resources; therefore their dwellings were built with light materials and simple construction techniques adapted from their previous dwelling experience in their homelands (Figure 9). At this stage, there were strong social ties among residents, which helped them adapt to their new city life among people from different cultural backgrounds.

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[2] *Kampala* dance is usually performed at night outside Nuba villages, sometimes at a central point between two or more adjacent villages to allow participation of as many youth as possible. This could be performed daily, weekly, fortnightly, monthly, etc. depending on the season of the year.
[3] A light shaded area used as a kitchen or as an extension to the hut/room.
[4] A small prayer room.

During that period, houses were built by adapting a traditional form, which consisted of a number of circular rooms built with mud that were combined sometimes with rectangular rooms (Figure 10). They usually had a traditional pitched roof made of straw on wooden rafters known locally as Dhahr Al-Thor, because it resembles an ox back, (referring to the shape of the roof not the room) surrounded by low boundary walls that allow neighbors to communicate with each other freely (Figure 11). This conformed with their local customs, in which the autonomy and need for privacy of individual family members were not important values to them.

After recovering from their tragic displacement and the cultural shock they had felt upon arrival in Greater Khartoum, the Nuba households started to work hard to find a place for themselves in the new society and to build their houses with what they can afford – which invariably meant mud walls, thatch roofs, recycled doors and windows made of timber and metal sheets. Thus, they started to go back slowly to using their previous building construction techniques and traditional designs. Henceforth, a mixture of building construction and dwelling layouts has appeared in their new neighborhoods; a mixture of the indigenous and newly adapted house forms. This transformation of the traditional house form could be attributed to the following factors:

- Interaction with other cultures and life styles in the city.
- Change of family financial resources, mode of work and adoption of some facets of the urban life styles.
- Social ties becoming stronger between families of the same ethnic groups.

b. Building after re-planning. Al-Rayan, and some other neighborhoods in Umbadda was re-planned by the Khartoum State Ministry of Engineering Affairs after the devastating floods of 1988 whereby each household was given ownership to a plot according to certain standards. After recovering from their tragic displacement from their homeland, they tried to fit into the city life with all its variables and new experiences. Therefore, for them, the floods were a blessing in disguise as it enabled them to start a new life in a re-planned neighborhood and to gain ownership of an urban plot at minimal or no cost at all.

During this phase, they have been supplied with a model design prepared by the Ministry of Engineering Affairs that consisted of two alternating rooms and two verandahs (Figure 13). This model design is common in northern and central Sudan and some call it "the railway design" because apparently it was first adopted by the Sudan Railways Company in the early 1900s. Although it suits the climate in the area, that house prototype didn't fit their way of life, culture, skills, previous house design, and economic situation, which led them to modify it resulting in different dwelling designs after re-planning. The main house variants were,

- **Type A:** houses that adopted the proposed Ministry of Engineering Affairs plan partially or fully (Figure 12 and Figure 13). Most of the residents who had adopted these plans were those who had lived in the city for some time before moving to Umbadda or have had better financial resources than the others.
- **Type B:** houses that didn't adopt the proposed plan. These were owned by residents who moved directly to Umbadda from their homelands, and had limited resources. Their houses were built through self-help among family members or tribal groups and were characterized by the following: Rooms scattered within the plot (Figure 14); some of them were not properly oriented and others windowless. This was justified by some interviewees who described their huts in their homeland as being windowless as well.
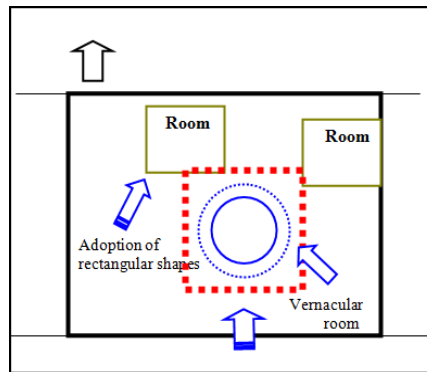
Fig. 10: Combination of indigenous and contemporary room designs in Umbadda
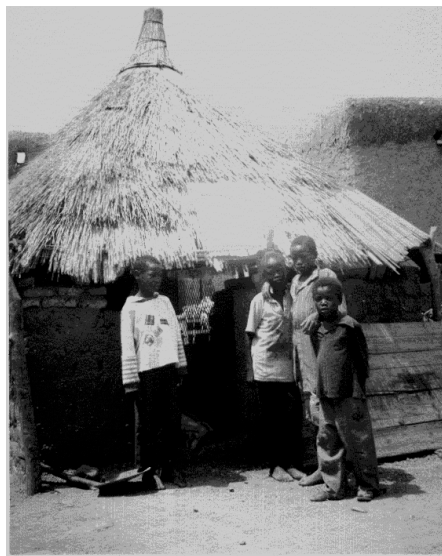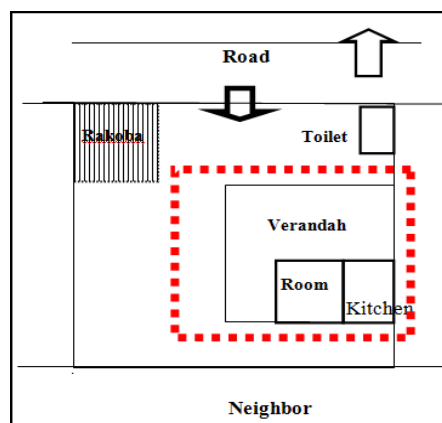

Fig. 11: Vernacular Nuba room

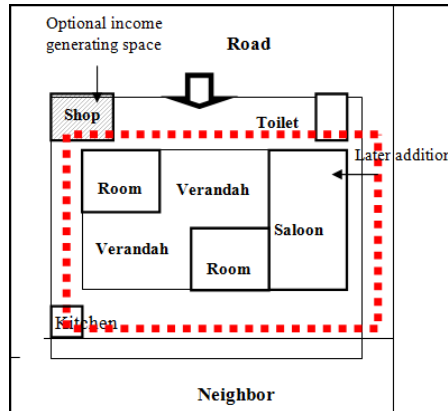**Fig. 12:** House Type A with partial adoption of the Ministry of Engineering Affairs' plan

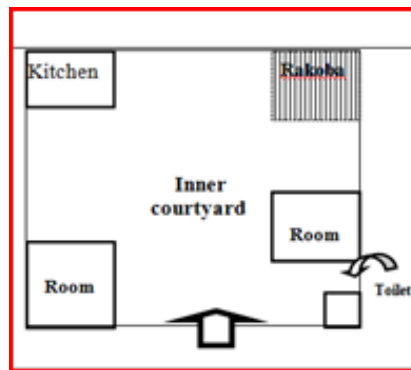**Fig. 13:** House Type A with full adoption of the Ministry of Engineering Affairs' plan

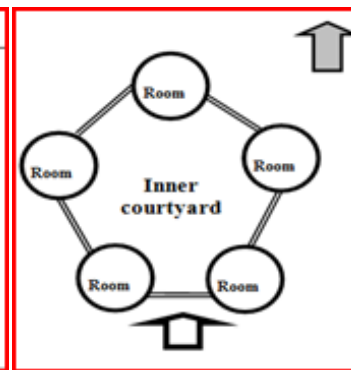**Fig. 14:** House Type B: Rooms scattered around the Plot

Fig. 15: Traditional Nuba house: Circular rooms spread around the plot

By comparing the houses in Umbadda with the typical traditional houses of the Nuba tribe (Figure 15 and Figure 11), it can be concluded that vernacular house transformations in the area before and after re-planning have passed through three different stages that can be classified as shown in Table 1.
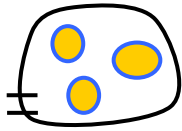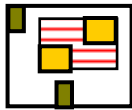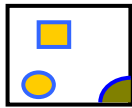
Dwellings	Form of labor	Construction materials and building techniques	Dwelling form	
Before re-planning	Communal self-help	Traditional construction techniques; houses built with tree branches, jute sacks, mud, and left over materials	Circular or rectangular rooms with low boundary walls	
After re-planning (Phase 1)	Hired labor plus family self-help	Simple construction techniques built using mud mixed with straw and, in rare cases, baked bricks.	Replicas of the Ministry of Engineering Affairs' prototype plan.	
After re-planning (Phase 2)	Hired labor, individual, and family self-help	Mixed construction techniques, using baked bricks, hand-made mud bricks, and mud mixed with straw.	Mixed circular and rectangular rooms with different construction techniques	

Table 1: Transformation of Vernacular Houses in Umbadda before and after re-planning

Concluding Remarks

- Transformations of vernacular houses in the neighborhoods were not spontaneous and had been induced by public authorities that promoted a specific prototype plan. In contrast, in other squatter areas surrounding the city, there is little government interference, which allows housing transformations to take place gradually and according to family needs and desires.

- The traditional dwellings in the area studied were capable of accommodating new functions as they were flexible enough to change and transform according to the economic status and needs of the dwellers.

- Adopting the rectangular house form by migrants indicate that people will adapt with the current space formation if they have no choice. It will also satisfy them by practicing their cultural, ritual and habitual attitudes within the limitations of space offered.

- However, the general features of the dwellings used were identical when they were occupied by people from the same socio-cultural backgrounds and economic status. After re-planning, this has changed because of changes of residents' economic status and exposure to new ways of life.

- Land ownership plays a key role in the housing transformations that take place in this area because people tend to invest their resources more in places they own and not so much in rented or squatted upon spaces.

Acknowledgments

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