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RESEARCH ARTICLE

Uncomfortable prototypes: Rethinking socio-cultural factors for the design of public housing in Billiri, north east Nigeria

Joy Joshua Maina[*,1]

School of the Built Environment, University of Nottingham, Nottingham NG7 2RD, UK

Abstract

Public housing delivery in developing countries often involves the provision of government-funded housing units. Over time, occupants transform such units to suit their changing needs or to increase and improve housing stock—a practice that has been the focus of several documented studies intended to inform policy makers about changing housing trends. Abandoned units have, however, received comparatively less attention. The present paper reports findings from the documentation and analyses of abandoned and modified prototype units in Billiri, the main town occupied by the Tangale community in north east Nigeria. The methodology involves space syntax methods, as well as the analyses of space use patterns in 45 randomly selected compounds built by the community and in two sets of prototype housing units in the study area. Results suggest that socio-cultural factors related to kinship, security, and basic needs, which form part of the community heritage, are inadequately reflected in the location and design of the units, accounting for their abandonment and modification. These findings have implications for future housing policies in the area.

1. Introduction

In recent years, researchers have increasingly become interested in housing transformation as a means of public housing delivery, especially in developing countries (Tipple, 1991, 1999, 2000,; Salama, 1995; Shiferaw, 1998; Salim, 1998; Tipple and Salim, 1999; Tipple et al., 2000; Sueca, 2003; Sheuya, 2009; Diang'a and Hayangah, 2011). Such studies have generally focused on government-provided houses in formally planned residential areas to inform policy

*Tel.: +44 7901146927.
E-mail address: laxjjma@nottingham.ac.uk
[1]Present address: 76 Lower Road, Beeston, Nottingham, NG9 2GT, UK.
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makers on the modifications and transformations implemented by users over time. These transformations are frequently documented through key data collection methods that include "observations, measurements and sketches of house layout plans showing situations before and after the transformations, still pictures, in-depth interviews and focused group discussions" (Sheuya, 2009, p. 86). Such transformations generally denote dysfunction or dissatisfaction by the occupants of the houses. The changes applied by the residents were instrumental in documenting and forecasting changing trends in the housing needs of future occupants in the areas studied. Although similar cases in Nigeria have been reported (Arimah, 1999; Aduwo, 2011), little attention has comparatively been paid to unoccupied or unmodified abandoned units.

The current work analyzes two sets of abandoned units in Billiri, North East Nigeria by comparing the spatial and morphological characteristics and space use patterns in the units with those in traditional compounds built by the community residents. Underlying this inquiry is the premise that certain traditional themes may not have been adequately incorporated in the design of the abandoned modern houses provided by the government. This deficiency accounts for the abandonment of the housing units. This study is a component of PhD research that aims, in part, to determine the socio-cultural factors influencing house form and residential structure in a region that lacks extensive architectural research. The findings are expected to inform future policy making for housing in the study area.

2. Historical and cultural background of the Tangale community

The Tangale people originated from the Middle East in Yemen in the 12th to 13th centuries, and migrated in stages through the old Borno Empire where they intermingled and later separated from other neighboring tribes (Gwani, 1999). After long sojourns, they settled in the Tangale hills, North East Nigeria partly for security during periods of frequent inter-tribal wars. Tangale settlements, compounds, and farmlands are traditionally organized into seven clans, namely Tangaltong, Tal, Kalmai, Banganje, Tanglang, Todi, and Nathe, on the basis of a strong social kinship network. This arrangement was advantageous in securing organized labor — the main occupation of the people — for activities such as building, hunting, and farming. A clan head represented each clan at special councils presided by the *Mai*, ruler of the Tangale community. The arrival of British colonials and the presence of Islamic tradesmen and Christian missionaries in Nigeria at the turn of the 20th Century paved the way for the incursion of trading and new building forms (Maina, 2012b). Notable was the introduction of rectilinear forms, concrete, and corrugated iron sheets in buildings. In 1948, the community relocated northwards to the surrounding plains toward Billiri and its neighborhoods. This move provided ample opportunity for experimentation with the new forms and materials. By 1960, when the country was granted independence, public infrastructure and community welfare became the responsibility of the government. This period witnessed the provision of tarmac roads, free educa-

tion, electricity, water supply, and public housing across many communities, including Tangale land. These events prompted the adoption of four housing typologies in the community (Maina, 2012b), including traditional compounds that comprise round mud huts, as well as a hybrid of mud huts and rectilinear rooms. The latter constitute the vast majority of the community sample chosen for this study. Other typologies include rectilinear rooms and houses constructed entirely in concrete, as well as the latest freestanding bungalows, which have been accorded an elitist status by the community.

The community sample is made up of 45 randomly selected compounds in occupied lands belonging to the Tangaltong clan. This clan was chosen for the sample population because its families were the earliest to settle in the area first occupied by the community in the Tangale hills (Gwani, 1999); it is also the only clan sub-divided into two sub-clans, making it more complex in social organization compared with the other clans. It therefore comprises the most number of families, totaling 29[2] . These families are spread across three urban towns (Billiri, Bare, and Komta) and surrounding village settlements (Kure, 1987; Mela, 2004). Billiri serves as the administrative headquarters of the local government area (LGA) and the location of the government-provided prototype units. The first set of prototype units, Pro I, consists of 20 single-bedroom duplex bungalows situated a few meters away from A345. The concrete units, constructed in the 1980s, are part of a national housing scheme implemented in most of the LGAs of Nigeria. These were not occupied by the Tangale community and remain abandoned. The second set of units (Pro II) is also constructed in concrete, and consists of three-bedroom bungalows with servants' quarters at the rear. These are found in some towns across the north east region of Nigeria. Four of such houses were constructed in Billiri, also along A345 (Fig. 1). Three of these units were abandoned and left unoccupied, whereas one was modified and occupied (Pro II mod).

3. Methodology

3.1. Space syntax analysis

For spatial and morphological comparisons, the floor plans of the compounds were analyzed using space syntax methods to obtain the basic syntactic measures of integration and difference factors H^* (Hanson, 1998, p. 31). Space syntax analysis quantifies relationships between social life and the built environment on the basis of the spatial configuration approach to exploring relationships between social behavior and space (Hillier and Hanson, 1984; Hillier, 1993, 1998, 2005). It is basically a "method for measuring space and identifying patterns in space use… based on the assumption that order in space originates in social life" (Asquith, 2006, p. 4). Space syntax analysis frequently revolves around determining the integration value (IV) of

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[2]This number was rounded to 30 and 1 household was randomly selected to represent a family in the 3 urban towns occupied by the clan. Half of that number (15) was used to randomly select households in the surrounding villages, totaling 45 compounds.