

METHODOLOGICAL APPROACH TO INCORPORATING HAUSA TRADITIONAL ARCHITECTURE IN URBAN DEVELOPMENT: THE CASE OF ABUJA, NIGERIA

TANIMU A. J. NOMA, ALI F. BAKR & ZAYED M. ELSAYAD

Department of Architectural Engineering, Faculty of Engineering, Alexandria University, Egypt

ABSTRACT

The advancement of cities is a major topic for consideration in our societies of today, and the same applies to Abuja, Nigeria, where various contemporary architectural styles have sprung up over the past years. Nevertheless, only slight attention has been given to incorporating traditional architecture into our current urban requirements. The main purpose of this research is to suggest possible ways that we can improve urban development with Hausa traditional architecture. A methodological approach is employed in this paper in order to deeply examine and broaden ways Hausa traditional architecture can achieve this in developing urban spaces within the city of Abuja. Results from this paper proved that Hausa traditional architecture adapts well in urban development when traditional building plans, materials and construction techniques are developed. That is, it is expected that the results should spur professionals such as architects, planners, developers and other government control agencies particularly in Abuja to develop models for infrastructure development. This paper concluded, however, that even with the advancement of building technology and materials, Hausa traditional architecture still stands out or fits well in the urban development. It also proffers ideas on how Hausa traditional architecture can be incorporated into the urban development.

Keywords: incorporate, Hausa, traditional architecture, urban development, Abuja, Nigeria.

1 INTRODUCTION

Found on the southwest of Sahara, Nigeria happens to be one of the most urbanised nations in Africa [1]. The urban infrastructures across Nigeria are under severe strain as a result of the large number of people migrating from rural areas in the quest for better opportunities [2]. In addition, all of this development and fast urbanization did not come without its problems [3]. Having new kinds of development that indicate a loss in the population's traditional form of identity is one of the issues facing urban regions like Abuja, Nigeria. Technology and globalization have merged into one culture, abstracting old traditions [4]. A future generation will lack knowledge of their roots as a result of the disintegration of rich traditional heritage, the replacement of traditional architecture with current and modern-day architecture, and with the replacement of traditional arts and crafts with new designs [5]. As a result, building professionals, notably architects, have not yet made sufficient attempts to incorporate traditional and native design concepts, methods, and crafts into modern practices. The increasing dominance of contemporary technology and concepts will be detrimental to indigenous skills in building design and construction [6]. Despite the fact that it is evident that traditional architecture has recently been frivolously disregarded in Nigeria by architects, designers, and government regulations, less consideration has been given to connecting traditional architecture with current development. Therefore, the goal of this study is to close the existing gap, by evaluating the methodological strategies utilized to incorporate Hausa traditional architecture into Abuja's development in Nigeria. The precise goals of the research are to (1) define the key characteristics of Hausa traditional architecture and (2) choose appropriate methodological techniques for incorporating Hausa traditional architecture into urban development in Abuja, Nigeria. In order to accomplish this, the following research inquiries were posed: what distinguishes Hausa traditional architecture in



particular? What appropriate methodological techniques should be applied to incorporate Hausa traditional architecture into Abuja's urban districts as they develop?

The study's findings are helpful in educating architects about traditional and cultural building environments that utilise indigenous building innovations and technologies.

2 METHODOLOGY OF RESEARCH

2.1 Locale of investigation

Abuja is situated 840 m (2,760 ft) above sea level at latitude 9.07°N and longitude 7.48°E geographically (Fig. 1). The city is part of the Federal Capital Territory, which is more than twice as large as Lagos state, Nigeria's former capital, and is the continent's most populous nation and sixth-most populated nation globally [7]. The territory's topography is marked by two well-known rock formations: Zuma rock, where FCT originates, and Aso rock, located east of the city [7].

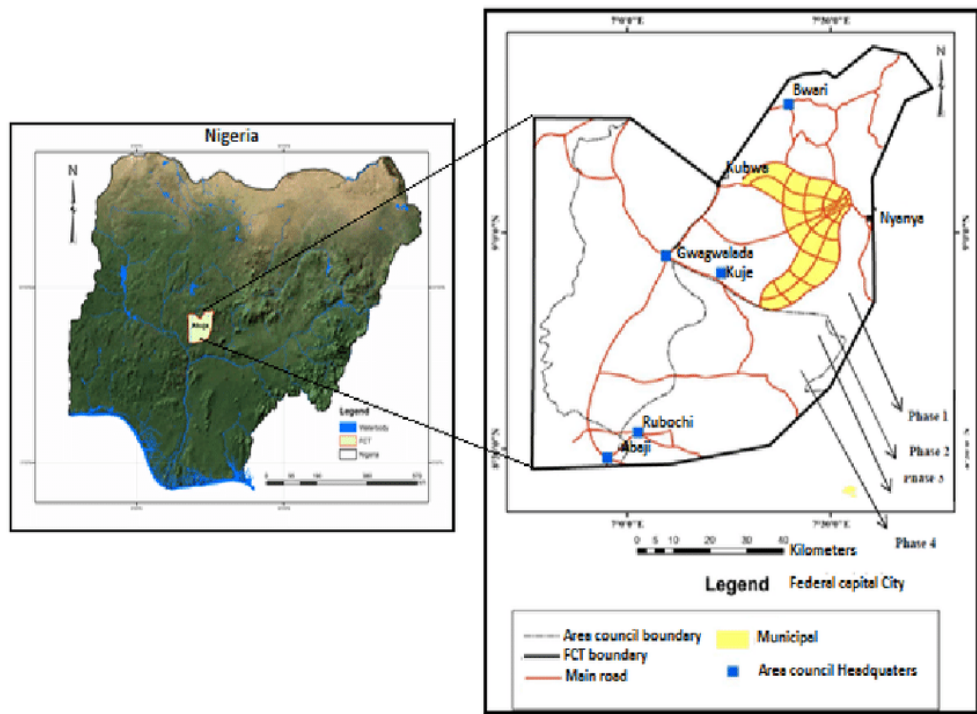


Figure 1: Map of Nigeria, showing the location of Abuja (federal capital territory) [8].

Due to its altitude and tropical position, Abuja has a moderate climate, which differs significantly with the humid climates of Lagos, situated on the Atlantic Ocean's coast at 35 m (11 ft) above sea level. Abuja region has two seasons: rainy season, which lasts from April to October, with rainfall ranging between 305 and 762 mm (12–30 in.) as well as temperatures exceeding 40°C in May, and dry season, which lasts from November to March and comes with dry winds that reduce temperatures to as low as 12°C. Due to abundant

rainfall, fertile soil, and its location within the Guinea Savanna vegetation region, the location is agriculturally productive, with maize and tubers as its principal crops [8].

2.2 Data collection methods

This study used a variety of approaches to collect data, including field surveys, observations, and secondary data from published sources.

3 HAUSA TRADITIONAL ARCHITECTURE

The “Hausas” live in seven centralised medieval fortified municipalities – Gobir, Biram, (Hadeija), Katsina, Kano, Kaduna, and Rano – which are generally referred to as the “Hausa States” (Fig. 2). Islam is the most common religious belief among these territories; it arrived in the 14th century and enhanced the Hausa monarchy and customs that already existed. The British colonial conquerors introduced a new form of governance and their distinctive architectural style in the late 18th century.

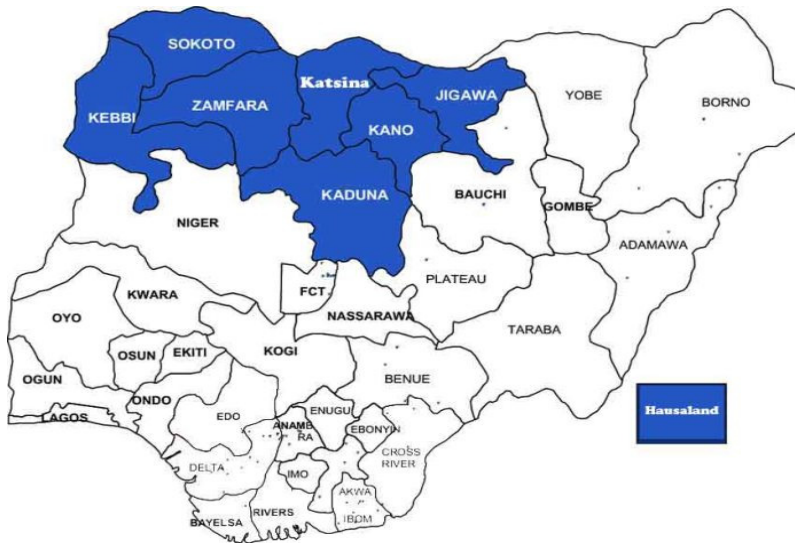


Figure 2: Map of Hausaland [8].

3.1 Functional spaces in Hausa traditional architecture

3.1.1 Hausa compound structure

“A typical Hausa dwelling is theoretically separated into three parts or layouts: 1. inner core (private space), 2. Centre core (semi-private area), and 3. Outer core, (public areas)” [9]. The ward, guest/servant area, and backyard space for animal rearing and waste disposal make up the women’s section, which is located in the centre of the compound. The majority of the central core is a courtyard used for domestic and other sociocultural interactions, and also for ventilation and lighting. These ideas first appeared in Egyptian residential architecture in the late (500 CE). As a result, the traditional village layouts of the Hausa people transformed into towns and villages with this kind of typology [10]. The family carries out the majority of their daily domestic tasks as well as other social or ceremonial activities in the compound’s

central open courtyard. It's also an area where toddlers may play or crawl peacefully without being disturbed. Meanwhile, one can also interact and dine with other family members and sleep through hot nights or seasons (Fig. 3). In Hausa compounds, there is a clear distinction concerning internal and outside spaces.

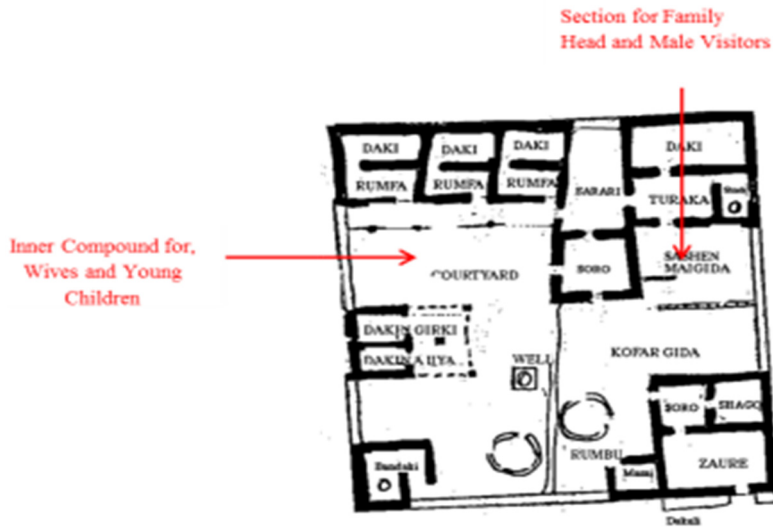


Figure 3: Plan of a Hausa compound [10].

3.1.2 Islamic architectural style

Islamic architectural style is inspired by “PUR-DAH” (women’s exclusion) zones such as Haremluk and Selemlik (non-accessible and accessible). The courtyard structure is used for social and domestic undertakings, while dining and kitchen areas are also important but the kitchen is sited faraway in the compound and the dining placed either separately or together in a lounge or open space. All these are the three common integrated spaces that are properly highlighted in other parts of the courtyard. For purposes of privacy, health, and other considerations, the restroom(s) are situated far from or at the end of the compound (Fig. 3). “Zaure’s” main function comprises of protection, security, hospitality, privacy, ethnic values, ornamentation, and administration [11]. Furthermore, the availability of a relatively wide space within the community enables congregational gathering to perform social occasions – for example, naming ceremonies, marriage ceremonies, and a play area for kids, among other things. The spacious area is devoted to livestock rearing, small farming, and for future development. The constructed spaces include bedrooms and sitting area, a kitchen, an entry space, restrooms, and storage [12]. The heights of compound walls are raised sufficiently to avoid any external person from observing what is happening within.

Nevertheless, the impact of religion as well as culture is also seen in the zoning system for privacy, including public, semi-public, and private areas – that is, public areas for guests, limited and unlimited areas for visitors and for boys and servants, which are referred to as semi-public, and private areas that are strictly for the household, in which the term “Ba shiga” is implied. These are completely inaccessible areas. The visitor spaces, on the other hand, are accessible. The master’s wing remains the quiet zone, while the family area is semi-noisy and the public (guest) area is the noisy zone of the compound [12] (Fig. 4).

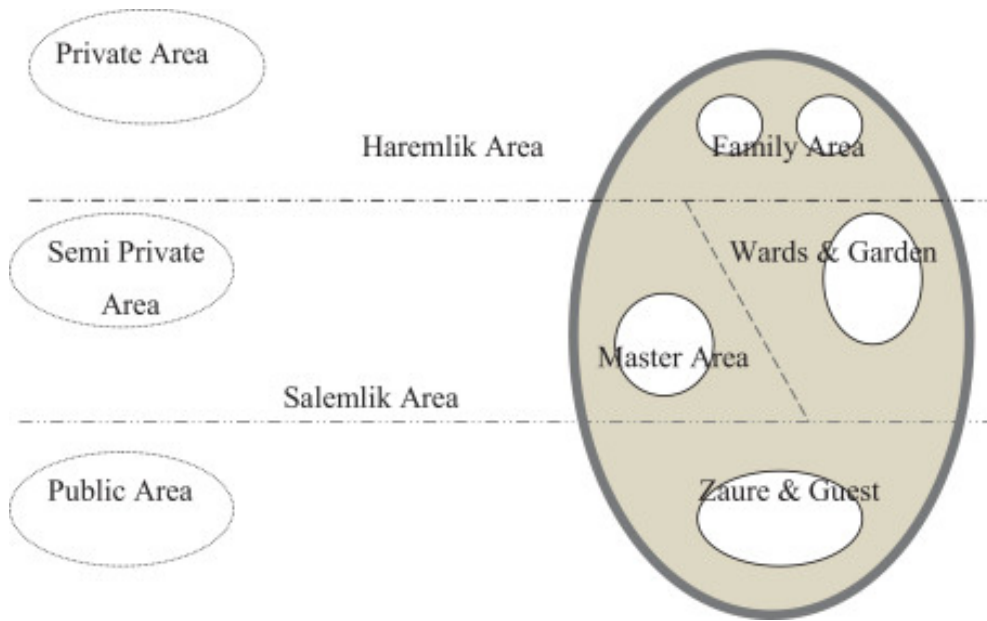


Figure 4: A form of Hausa compound layout [12].

4 HAUSA TRADITIONAL ARCHITECTURAL CHARACTERISTICS

Hausas have a rich architectural legacy that is regarded as the most magnificent of the mediaeval period. Most of their early buildings, including mosques and palaces, were decorated with artistic motifs or vibrant colourful engravings that are designed on the façade. These traditional structures were made in a variety of sizes and designs, having a unique aura because they were made to inspire pleasure and elation. In fact, how a building is constructed and the sheer artistic skill that goes into it both work together to reflect characteristics of people's growth, culture, and history and go a great way toward reflecting the specific surroundings of people's mindsets [13]. Construction uses naturally existing elements like adobe, timber, stone, and thatch that don't require a lot of energy to obtain. Almost all building components, including foundations, walls, columns, slabs, beams, roofs, openings, and rehabilitation processes, require these building materials. In addition to this, other unique qualities, ornamentation, and engravings can be constructed using these building materials. These various components are described below.

4.1 Adobe

Adobe is a plentiful resource in the northern part of Nigeria and indeed the primary traditional material used for the manufacture of bricks and finishes. Because of its excellent thermal characteristics and delayed absorption and release of heat, it keeps building occupants warm at night and cool during the day [14]. The earthen walls are built functionally better than sand-crete block walls and are significantly less expensive, with minimal heat conductivity [15]. These earthen buildings are environmentally sound, remain firm and stable once walls are plastered, and can last for many years if regular care is followed and roof overhangs are appropriately placed [16] (Figs 5 and 6).



Figure 5: Adobe used as a building material in constructing the 15th-century Gidan Rumfa in Kano [14].



Figure 6: Adobe used as building material [10].

4.2 Stone

For structural support and as a moisture barrier, Hausa architecture uses stones in the foundation of its buildings [17]. Stone is utilised in walling in certain northern states, most notably Katsina to symbolise authority. It has been noted that several native authority buildings feature stone walls. When compared to the typical over-site concrete floors, stone foundations offer a less expensive option, particularly as it needs less upkeep and because it guards isolated walls from the outside environment (Figs 7 and 8).

4.3 Engravings and wall décor

Engraving is the process of carving designs onto wall surfaces using different types of grooves (Fig. 9). It has been done from hundreds of years before Christ [18]. Typically, this



Figure 7: Stones used as retaining wall [23].



Figure 8: Perfectly cut flagstone from limestone used for wall caps, pool decks, garden walkways, and patios [23].

is done by expert hand engravers, competent traditional builders, and artisans. The three groups of Hausa traditional architectural decoration – surface design, calligraphy, and ornamental – are well known [19]. Even the colour finishes for these products are made



Figure 9: Engraving works on the façade [14].

entirely from natural ingredients. These engravings endure time's effects to a respectable extent. These colours and decorations are used to reflect the building owner's status quo and symbolise riches.

4.4 Timber

In Hausa traditional structures, walls and pillars are made of solid structural timber. The beams, brackets, and corbels that are used to support flat and domed roofs are made from the trunks of male palm trees (Dalep or Gingiya), which are also referred to as "Azara" beams. These beams are utilised to build frame structures. They are robust, durable, and termite resistance. They are also treated with solutions obtained from trunks to seal the tops of roofs that are usually flat [20].

4.5 Grass and thatch

The thatching process is a practice of building construction that has existed for more than three centuries and has been handed down from generation to generation. Ancient African structures were frequently thatched with grass. These building supplies are made from matted straw from wheat, oats, barley, rice, and other grains. They are used to build walls that are stuccoed using lime or earth [16]. In many underdeveloped nations, thatch is used by traditional builders because it is inexpensive and can be easily obtained from local plants [18].

5 DISCUSSION

Modern construction and Hausa traditional architecture have the inevitability of incorporation at the traditional level. Traditional building that is incorporated with religious beliefs have been sustained over the past years. The methodological systems employed are discussed below.

5.1 Intensive conduct of architectural research works

To determine the culture and lifestyle, as well as the growth patterns of Hausa architectural practice and typologies, extensive literature reviews should be conducted. It is important to conduct research on the usage of organic and sustainable materials that enable buildings to adapt to tropical climates. This would significantly contribute to the creation of practical and long-term developmental urban strategies, particularly in Abuja, Nigeria.

5.2 Observe Hausa traditional principles of design process

As a result of the present tremendous urban development, there is a need for innovation in buildings aesthetics, ideas, and efficiency. The Hausa architectural style has many shortcomings that must be taken into account for urban development objectives. Architecture is a form of poetry that must be built from its roots and conveyed properly in its language rather than being copied after imported models [21]. As previously said, more practical building design activities should be aimed at reconciling traditional and modern planning approaches. For example, re-establishing the idea of triple space will help towards developing and sustaining a healthy society and connecting the city together, encouraging safer neighbourhoods, and creating a vibrant community culture. Its usage of a courtyard, which has effectively linked “the outside environment to the inside”, devoid of violating privacy, must be promoted and continued, since the benefits of the conceptual plan is clearly realized in Hausa typical home setups.

5.3 The incorporation of traditional construction materials, building methods, and practices

Isa et al. [17] stated that adobe brick innovations have been used to house one-third of the world's population, with 30% of the world's population living in adobe dwellings, according to the UN [22]. In the past few years, there have been attempts to preserve adobe with additives and compaction for prolonged use in Abuja as well as its surroundings. The Nigerian Building and Road Research Institute (NBRRI) [23], established under the auspices of the Federal Ministry of Science, Technology and Innovation, has produced a number of research discoveries, among which is cement-stabilized adobe blocks (Fig. 10). These are created by adding cement and water to laterite soils. When building brick walls, mortar is used to lay the bricks. It is thermally comfortable and cost-effective for wall building. This shows that by incorporating its building technology, traditional materials have been able to be altered to meet current demands [24].

5.4 Conduct thorough field research and analysis

To determine how well different building materials and technologies relate, a thorough analysis of their qualities, applications, and properties must be conducted. The strength, durability, density, thermal values, water absorption, and moisture content of building materials should all be considered. Additionally, market research should be done to make sure the product is accessible, affordable, and useful. The comparative benefits in terms of performance and affordability should be supported by data acquired with regard to quality, applications, and cost.





Figure 10: A house under construction using NBRRI CEB technology in north-central Nigeria.

6 CONCLUSION

This paper adopts a methodological method of incorporating Hausa traditional architecture into urban development within the city of Abuja, Nigeria. An intensive study has proven that the utilization of improved low-cost traditional building materials such as adobe, stone, wood, and thatch in design and construction is functionally and aesthetically appealing. The utilization of Hausa architectural murals, motifs, decorations, and symbols in contemporary formats can be used aesthetically in streetscapes within the city, thereby giving the urban centres outstanding beautification to attract more visitors.

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