

# **METHODOLOGICAL ISSUES IN ARCHITECTURAL CONSERVATION, PRESERVATION AND RESTORATION OF HAUSA TRADITIONAL RESIDENTIAL BUILDING: CASE STUDY OF KANO METROPOLIS**

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## **Abstract**

Hausa traditional architecture is being drastically affected or transformed by the current forces of modernization and westernization. Residential and public traditional buildings including royal houses are rapidly changing the traditional cityscape. The traditional mud material and construction method are phased out with obliterations due to neglect and increasing rejection of tradition value, as well as the desire for modernization of traditional architectural style. It is in the light of this steadily diminishing residue of our cultural heritage, that the contemporary architects, administrators and urban planners are becoming increasingly interested in the preservation, restoration and restructure of Hausa architectural residential building intended to commemorate with the movable (work of art) or immovable (stone work or any other material).

**Keywords:** Traditional architecture, conservation, restoration, Hausa traditional houses

## 1. Introduction

The heritage and historical buildings are not local treasures but they are a human heritage and international property (Godwin 2011). Conservation and preservation principles were first developed in the 19<sup>th</sup> / 20<sup>th</sup> century based on an early Architectural School of Thought that either encouraged measures that would protect and maintain buildings in their current state and prevent further damage and deterioration to them. In other words, the architect should determine the possibility and period of greatest perfection of a building or monument. Conservation of traditional building is very important because it provides a sense of identity and continuity in a fast changing world for future generations. What makes urban and architectural heritage special is their survival through time; they resist a lot of natural weather disasters, difficulties and damages. The permanent shortage of heritage buildings and their disappearance through time, calls the attention to preserve heritage through maintenance and rehabilitation.

Moreover, conservation and preservation is referred to as the “careful management of limited or vulnerable resources, such as historical monuments and buildings”, in order to ensure its efficiency and continuity of use to achieve the following objectives; to preserve and rescue works done by traditional builders and craftsmen, and testify man’s creative genius, his intuitions and perceptions. Secondly, to make his work accessible to people whose heritage they constitute, and rediscover the proof and spirit of their cultural identity for their continuity in life to define what gives lasting identity. Hausa traditional buildings also assess the extent to which the so called TRADOMO1 conventional typologies can be absorbed sympathetically among the old ones. Apparently, their significance is that, they have been built by succession of local builders and have managed to attain the inherited qualities of past that survived into the 21<sup>st</sup> Century.

### 1. 1 Hausa Traditional Building

The construction of residential or public traditional mud house building in Kano metropolitan city is carried out by locally and skillfully trained craftsman, who mainly use indigenous materials and traditional building technique. They are of mud, building is an inherited craft, the older and skilled builders instruct only their own children from generation to generation. The method varies slightly from city to city (Daldy, 1945).

According to Sa’ad (1986), colonialism has been the major cause directly or indirectly of the major changes or transformation in the architecture of Kano in particular and Hausa in general. However, these changes are reflected more in the appearance rather than in the configuration of space in Hausa domestic architecture. This does not mean to say that there are no changes in the form of Hausa traditional architecture or that the changes are not substantial, but however these changes or transformation were superficial or dimensional rather than morphological.

One of the major ways that Hausa traditional building and technology is in the process of gradual change or transformation is that the present system has provided a dignified built

environment with many beautiful buildings of architectural merits making good use of foreign building materials.

## **1.2 Hausa Traditional Buildings in Kano Metropolitan**

Traditional buildings could be described as structures with local materials (Mud Brick, Clay, Timber etc) in traditional concepts and style, with the aid of local craftsmen or builders. And can be classified into the following typologies:

- i. The private residential buildings
- ii. Colonial houses (Gidan Dan Hausa, Gidan Be-Minster, Gidan Makama etc).
- iii. The royal house or palaces
- iv. The public buildings, which comprise mosque, markets, prison, school, city wall, and gates, each of these typologies could be distinguished by certain characteristics ranging from its size and form, location and construction. These exclude monumental sites such as Dala and Gorandutse hills. A systematic procedure and the scope of any study must be defined and distinguished at the onset in both the extensive recording and intensive recording or survey.

## **2. Objective of the Research**

The main objective of this paper is to highlight the methodologies of research in Hausa traditional buildings for the purpose of conservation, preservation and restoration. And in order to achieve this objective, the following are to be discussed:

- i. General research methods in architectural research
- ii. Identification of various typologies of traditional buildings
- iii. General (research methods on how to study traditional buildings)
- iv. Outline appropriate methods for studying for conservation, preservation and restoration.

The paper will also outline significance of conservation and preservation of our rich architectural heritage, which could only be successful by researchers' documentation and implementation, as practiced in other parts of the world (Example; Gournna Housing Project by Hassan Fathy).

## **3. General Research Methods**

The desire to carry out a piece of architectural research implies that there is a subject or object to be studied, or there is a question to be answered. Invariably the research would at least provide a basic understanding of a simple or complex phenomenon in one's environment.

The design of the study begins with the selection of a topic and a paradigm. The human and social science researchers help us to understand phenomena, and identify what constitutes legitimate problems, solutions, and criteria of "proof" as Philips (1989) puts it. The paradigms consist of both theories and methods; however, they evolve and differ by discipline or fields.

However, research design simply means design of a strategy for finding out something, although special details vary according to what you wish to study. Creswell (1994) noted that, there are three major aspects; first, specify precisely the topic and paradigm. Secondly, to determine (methods) the best way to do that. Thirdly, the focus of a study is the central concept being examined; it may emerge through an extensive literature review, personal hypothesis, or suggestion from colleagues, research advisors, or be developed through practical experience. Once the researcher is comfortable with a specific focus, the next decision involved is selecting an overall paradigm for the study (the qualitative and the quantitative), an analogy with 20<sup>th</sup> century philosophical thinking.

To understand assumption of each paradigm, writers have contrasted them on several dimensions (Fire Stone 1987, GUBA and LINCON, 1988) - see quantitative and qualitative formats respectively cited by Creswell (1994). Within the paradigms, one needs to specify the method used. The quantitative methods include experiments and field surveys. While qualitative method includes ethnographic studies, grounded theories, case studies and phenomenological studies. These paradigms and methods could be used suitably by architectural researchers.

### 3.1 **Extensive Recording (Survey)**

This involves a general reconnaissance survey of the actual geographical area selected which should be restricted by method of sampling chosen i.e (clustered, stratified, random etc.) this will enhance reducing subjective elements, as far as possible, and assist in the comparison of materials or samples between different parts (Example, Jakara, Yakasai, Kurna, Gyadi-Gyadi, Yankaba, Dorayi wards in Kano metropolitan).

The traditional sample selected should be carefully defined, normally from the classified typologies in item 4:0 sampling areas could be identified as inner core, outer core of periphery of the town or city. Their formal characteristic might gradually vary from the core to the periphery. The system is intended to collect basic architectural information as revealed on the exterior of building (Brunksill 2002).

### 3.2 **Basic Procedure**

#### **Extensive Survey**

- i. Define the survey area, title, location of village quarters or wards in the area or town.
- ii. Identify the type of building or structure (form) of the typologies for the research to be under taken (private house, royal houses or public buildings etc).
- iii. Identify the purpose of objective of the research; if building structure or monument is to be conserved, preserved, or restored it entails different approaches and strategies.
- iv. Decide on relevant period of the building, some buildings may be entirely one but may show evidence of work of several periods and materials. It is important to decide on significant period and note variations separately.

- v. Identify building or structure from reference ordinance, survey map, and note the aspect, direct front view, street, neighborhood structure, etc
- vi. Note down principal buildings/walling material i.e stone wall, mud walls caly timber, etc. dates may be inscribed on door, timber or scratched on the entrance (azure) notice partition wall screening the interiors called “Gorami”.
- vii. Note down principal roof types, materials, and construction methods; two common types - flat and dome shape (‘Daurin Guga’, and Rufi’).
- viii. Observe the principal wall finishing materials (plaster motif and decoration on external finishing).
- ix. Analyze the foundation structure, its stability or otherwise, the materials used, approximate depth and possible imaginary level.
- x. Observe floor finishing (usually 3 types) - ‘Dabe’ comment screed or its combination.
- xi. Note down salient features such as type and material piers opening in doors, windows and their purposes.
- xii. Note down orientation of the building, usually N/E/S/W. Photographs, diagrams and sketches, however, crude are always useful and indispensable.
- xiii. Note down initial date and of survey date using sample records card and photographs based from physical observation
- xiv. State of repair or despair in roof, wall (internally and externally), in various elements of parts of the building.
- xv. The general state of dilapidation, then it is easier to determine the extent or scope of the work to be carried out.

Considering the scope of the work to be carried out, availability of materials required, labour and craftsmanship, now it will be easier and appropriate to suggest what to be done on a particular building or structure, either conservation, preservation or restoration (based from the result of the extensive survey – see appendix I).

### 3.3 Intensive Recording or Survey

In the process of an extensive survey, it will be seen that certain building forms recur and differ drastically. Examples of such buildings should be selected for intensive study or survey, through preparation of measured or sketched drawing. The two distinct processes involved should be ideally and essentially carried out by both the researcher and research assistants.

This study involves careful observation and recording of room, size geometric shape, walling types, thickness, and materials, and construction methods employed in the internal concept of the building in zoning, courtyard system (‘Tsakaargida’) etc., services (water, waste and light) or other amenities.

The period of the study is very significant; it should be firmly defined. In most cases there is difficulty in fixing the earliest date (because of the rationale or justification behind it), but the choice of terminal date may be more debatable, example, changes in

traditional building from 1950 to year 2000. (i.e residential houses and royal houses as well as city walls and gates).

### 3.4 **Basic Procedure Intensive Survey**

This involves distinct processes, measuring, sketching and physical analysis. Care should be taken to avoid error in figures and complexity in sketches.

- i. Personal – An ideal team is to be used where three to five persons may be involved (one researcher and two or four assistants), and there is the possibility to include one lady or two, to enter houses in Purdah ‘Kulle’.
- ii. Obtain permission and protocols based on tradition and customs, from ward heard, and co.
- iii. Locate, the building from base line front fence, on nearest access, or street.
- iv. Prepare sketch, plan sections and elevations, these should be in a reasonable proportion using light materials, but conspicuous.
- v. Proceed to room, take dimension, sketch geometric shape, and identify its function i.e ‘Daki’, ‘Falo’ or ‘Soro’.
- vi. Identify wall types and materials, measure its thickness from top to bottom because mud walls are usually tampered from bottom to top and materials used.
- vii. Take sectional division, using stair cases to give overall height floor to ceiling for each room (‘Dabe’ to ‘Rufi’).
- viii. Observe roof type either dome shape conical ‘Daurin Guga’ Rufi or flat roof, the design and angle of roof slope.
- ix. Notice and record floor finishing (‘Dabe’), cement screed finishing, its thickness and state of repairs.
- x. Take dimension of each elevation in turn related to horizontal datum line, including upper floor, the absence. Others could be estimated by counting the number of bank courses and identify in selected detail and take their dimension.
- xi. Take note and sketch artistic decoration probably on walls, plastering roofs, and timber doors. The materials, colors, used in painting (white wash/Farar Kasa or Makuba).
- xii. Take note of general concept of the house private/public/service areas as in the courtyard systems.
- xiii. Take photographs of elevation and details, a composite photograph may be more suitable (See appendix I).

### 3.5 **Ration of a large scale details from the sketches of complex and interesting features**

Prepare a key and code for cross-referencing, evaluating and assembling according to survey sheets and notes. It will be helpful if sketch plans are drawn in pencil, dimension/lines in other colour, notes and cross referencing in another colour.

With a team of 3-5, one assistant should hold the fixed end of the tape, another read off each dimension, a separate sheet should bear address of building, surveyors name, code number and date of survey. The drawings are intended to communicate information; to

this end the presence or absence of any line or figure is significant and its thickness should be in relation to its importance.

As “a continual process of change”, some buildings will be removed, others will be restored, while others will be replaced. It requires knowledge of materials and structure (chemistry, physics, archaeology and architecture). This influence will be used to raise the level of its identity, standard of amenity as well as its overall significance.

### 3.6 **Method of Studying Building for Conservation**

- i. Identification of the object or building type and location.
- ii. Description with sketches from observation stating climate condition, neighbourhood elements and any other data or information.
- iii. Examination on materials, composition and constituents, state of dilapidation etc.
- iv. Analysis of sub-structure to super structure salvations in foundation including side drainages, nature of walls, roof types and situation, external finishing and decoration, silent features etc
- v. Identification of any alternative works, maintenance work done, its extent material and period.
- vi. Investigation reason, measure and state results.
- vii. Suggest possible treatment, such as appropriate techniques, process, to be adopted, apparatus, equipment and their technical application.
- viii. Suggest results, conclusion, and record date.

#### **Works may Involve**

- i. Removal of the building or monument to another location
- ii. Restoring some elements or complete re-building
- iii. Periodic maintenance ranging from 3-5 year using same materials or improved ones.

### 3.7 **Method of Studying Building for Preservation**

- i. Preparation of an underlying framework for the whole visual structure of the town (i.e. Kano metropolitan, royal palaces, colonial houses, city walls and gates).
- ii. Analyzing and defining areas or buildings for change or renovations (i.e royal houses, colonial houses etc).
- iii. Analyzing and defining areas or building for protection (i.e city wall and fate etc)
- iv. Investigation, soil nature, foundation strength and external factors,
- v. Analyses areas affected by solar radiation, moisture penetration, wind damages and their sources.
- vi. Analyse quality of materials, (weakening, or wearing againg), and workmanship.
- vii. Analyse nature loads, cheek, area or parts that may require additional structural supports.

viii. Results and recommendations (Date), etc.

### 3.8 **Method of Studying Building for Restoration**

The system basically involves evaluation and treatments

- i. Analysing environmental/wind and solar radiation, areas and points affected.
- ii. Check ground level situation, foundation weakness, overturning and angles or elements.
- iii. Check walling types, thickness, materials, joints, curves, edges and weak points.
- iv. Check finishing in wall, floors, roofs, plastering, flooring, possible cracks, sources and widths.
- v. Check position of opening (Doors/Windows), their width, and height, type of load above lintel, materials, strength etc.
- vi. Check roof slopes, valleys, moisture penetration, linkage span and materials.
- vii. Check external ground surfaces, soil grade level and drainage system and external of improvement required.
- viii. Analyzing chemical or biological agencies single or in combination, that bring about determination of building or its parts which threatens to cause eventual destruction of vital parts.

#### **Evaluated sketches and results may suggest**

1. Partially internal restoration to complete restoration, which may involve: a) removal of some elements (b) replacement with new and durable materials
2. Treatment involves eradicating, chemical/biological attacks, by cleaning scrapping surface coating, leveling and filling and painting.

### 4. **Conclusion**

The cultural wealth of the Hausa traditional architecture should be preserved for the education and appreciation by the future generation. It is hoped that careful research and documentation of traditional buildings will help to illuminate the activities for which buildings were intended and the process by which they were brought into existence.

It should equally be acknowledged that there are some prospects in conserving and preserving the concepts and methods of construction of these building for a worthwhile purpose. Government and other professional bodies building conservation monuments should address the issues of local sourcing and improvement of traditional building materials as well as reawakening and utilization of our local builders and craftsmen with more sincerity, and aggressive programme on mental re-orientation should be embarked upon and pursued with determination. Similarly, universities, research institutes should be commissioned to develop and improve local buildings to bring into practical realization of research findings of our local materials and technology as successfully practiced and executed in other parts of the world.



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## Appendix I

### COMMON TERMS USED IN HAUSA TRADITIONAL BUILDINGS

|                |                         |                    |                           |
|----------------|-------------------------|--------------------|---------------------------|
|                |                         | Badala-ganuwa      | City Wall                 |
| Kofan Gida     | Front Elevation         | Bayan Gida         | Rear/Side Elevation       |
| Tsakar Gida    | Court Yard              | Kasuwa             | Market Square             |
| Dandali        | Twon/Ward Square        | Zaare/Soro         | Entrance Toyer            |
| Turaka/Shigafa | Master Area             | Cikin Gdia         | Family Area               |
| Katanga        | Compound Fence          | Makota             | Neighbouring Houses       |
| Tungo/Haya     | Access Way              | Gidan Sarki (Fada) | Emirs Palace              |
| Gidan Mutanda  | Museum                  | Tit                | Major Road                |
| Kotu (Layi)    | Court                   | -                  | -                         |
| Gida           | House                   | Makaranta          | School                    |
| Kududdufi      | Pond (Water Long Area)  | Garu/Bango         | Wall Internal/External    |
| Taga           | Window                  | Daki Da Ruma       | Red Room/Pallor           |
| Rufi           | Roof Dome Flat          | Kofa               | Door                      |
| Dabe           | Floor                   | Shafe/Feenti       | Plaster/Painting          |
| Ado/Zane       | Decoration              | Dagi               | Northern Knot             |
| Kwatami        | Waste Water Line/Pitch  | Lantarki           | Electricity               |
| Famfo          | Tap Water               | Itache/Katako      | Wood                      |
| Farar Kasa     | White Wash For Painting | Makuba             | Brown Earth For Finishing |
| Sura           | Drawing                 | Bula/Tukuba        | Mud/Native Brick          |
| Unguwa         | Ward/Area               | Maigida            | House Hold Head           |
| K/Hukuma       | Local Government        | Dan Boto           | Peak In Roof              |