



Conservation Guidelines and Techniques for Historic Urban Landscapes: Promoting Cultural Tourism in Kano Ancient City

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Abstract: The transformation of Historic Urban Landscapes (HUL) often leads to the erosion of cultural heritage, necessitating the implementation of robust conservation guidelines and techniques to preserve these landscapes for future generations. This study conducts a comprehensive content analysis of the policies and methods employed in the conservation of HUL within Kano Metropolis. Six major historical monuments were selected, including three buildings and three archaeological sites, as identified by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the National Commission for Museums and Monuments (NCMM), and the State Culture and History Bureau. Key legislative frameworks analyzed include the 1999 Constitution, the NCMM Act, the National Gallery of Art Act, and the National Council for Arts and Culture (NCAC) Act. The study identifies reconstruction, replacement, recoating, and enveloping as the primary conservation techniques applied to the selected monuments. These techniques predominantly utilize traditional methods, thereby preserving the authenticity of Kano's cultural heritage. However, the study also reveals significant challenges, including inadequate funding and a shortage of skilled personnel. Major interventions were observed in the conservation of built heritage such as the Kano city wall, gates, and the Emir's Palace, while minor interventions were noted at monumental sites like Dala Hill, Kano Dye Pits, and Kurmi Market. The study concludes with recommendations to enhance conservation efforts, including fostering collaborations between the NCMM and international conservation bodies, investing in training programs for conservation professionals, adopting transferable development rights (TDR) in contemporary developments at heritage sites, and advocating for legislative support to enact new conservation laws.

Keywords: Heritage; Cultural tourism; Conservation techniques; Historic urban landscapes; Kano city; Conservation planning; Hausa traditional architecture; Conservation policies

1. Introduction

Preserving and protecting cultural heritage, integrated with a living attribute, has emerged as a universal concern in the field of heritage practice (Salim et al., 2021). It is crucial to maintain buildings of historical and architectural significance from various periods and styles (Tijjani & Aliyu, 2017). Although change is inevitable in human life, the absence of old buildings can create a sense of uncertainty, and the continuity is perceived as lost forever (Fathy, 1973; Umar et al., 2019). Historic buildings, for various reasons, are deemed worthy of conservation for as long as possible by society. The conservation of historic and monumental buildings offers contextual sensitivity and cultural sustainability, serving as a technical expression of the aesthetic language of a specific place and time that

embodies cultural and traditional values. This underscores the critical nature of built-heritage conservation in providing a sense of belonging and adapting to the fast changing global landscape for present and future generations (Yusuf et al., 2023a). Cultural heritage is defined as the legacy of intangible and physical features inherited from history, maintained in the present, and left for the benefit of future generations (Sayo et al., 2017). The preservation of traditional architecture strengthens five senses of quality, namely, the community, ownership, evolution, identity, and sense of place (Tijjani & Aliyu, 2017).

The enduring disappearance and casual abandonment of built heritage over time emphasize the need for the restoration, rehabilitation, and preservation of historical landscapes (Umar & Yusuf, 2019; Yusuf et al., 2023a), aiming to enhance the cultural value and significance of these structures. According to Feilden (2007), values associated with cultural property fall into three primary categories: emotional values (such as continuity, identity, wonder, spirituality, and symbolism), cultural values (encompassing archaeological, historic, documentary, age-related, paucity, technological, ecological, aesthetic, landscape, symbolic, townscape, architectural, and scientific aspects), and use values (including economic, political, social, functional, and ethnic considerations). The conceptualization and techniques applied to the conservation of heritage buildings in Nigeria exhibit considerable variation (Akinbamiyo & Alakinde, 2013; Okpalanozie & Adetunji, 2021). This indicates a focus on studying historic buildings influenced by international styles, while there is a need for adaptation in the local community's understanding of conservation (Salim et al., 2021; Taylor & Lennon, 2011). Despite the abundance of living heritage sites in Nigeria, studies aimed at conceptualizing conservation techniques in the country remain inadequate. Additionally, studies of historic buildings in northern Nigeria, particularly in the Hausaland, have been limited to investigating motif designs, structural elements, building materials, and local architectural characteristics (Agboola & Zango, 2014; Dmochowski, 1990; Saad, 1981).

The desire to safeguard Nigeria's built heritage is prompted not merely by its economic and socio-cultural significance but likewise by its deteriorating condition. Materials utilized in the construction of architectural heritage buildings usually undergo chemical, biological and physical decomposition due to both weather conditions and human activities (Kigadye, 2014; Yusuf et al., 2023a). The delicate earthen structure and construction materials of these cultural heritages, combined with the impact of weather elements, make factors influencing their sustainability a crucial consideration. Notably, earthen structures tend to deteriorate more rapidly than other heritage properties, particularly due to the influence of rainfall and the fragile nature of the materials involved (Correia, 2016; Salim et al., 2021). The consequences of these deteriorating agents are evident in the form of patina, surface, bulges, cracks, basal erosion, crust formation, and fragmentation (Okpalanozie & Adetunji, 2021). Additionally, the structural development and technological advancements in modern society are rapidly endangering traditional ancient city walls and gates. These city walls, like other historic buildings, exhibit distinct characteristics of traditional architecture.

Recently, the NCMM effected conservation interventions from 2018 to 2021 to counteract the impacts and extent of defects posing threats to the values and safe use of historical monuments (Okpalanozie & Adetunji, 2021). Consequently, the historic building has gone through significant changes and rehabilitations in response to modernity (Dmochowski, 1990). Various conservation techniques were employed across different geopolitical spaces during this period to preserve and protect these historical monuments from further deterioration, thereby contributing to the historical, socioeconomic, and cultural benefits of the communities. This study aims to address how these monumental buildings changed over time and how the conservation techniques put in place preserved and restored these buildings. Against this backdrop, this study seeks to identify different techniques employed in the conservation of historical buildings, examine the challenges and prospects associated with their implementation, and provide recommendations.

Kano, a historic city in Northern Nigeria, has a rich cultural and architectural heritage dating back over a millennium. Founded in the 10th century, Kano became a major centre of commerce and Islamic culture by the 15th century, attracting traders and scholars from across Africa and beyond. The city's architectural legacy includes ancient city walls, traditional Hausa buildings, and numerous mosques and palaces, which collectively reflect its historical significance and cultural identity (Aliyu & Ismail, 2023). Efforts to conserve Kano's heritage have a long history. Early 20th-century initiatives focused on maintaining the structural integrity of the city walls and key historic buildings. In recent years, organizations like the NCMM have played a crucial role in preserving Kano's built heritage. Conservation projects from 2018 to 2021 included structural reinforcements, restoration of original architectural elements, and community engagement programs to promote heritage awareness (Gulotta & Toniolo, 2019; Okpalanozie & Adetunji, 2021).

Heritage conservation in Kano faces several challenges. Rapid urbanization and population growth exert pressure on historic sites, leading to encroachment and deterioration. Additionally, limited funding and resources hamper comprehensive conservation efforts. Climate change and environmental factors, such as heavy rainfall and erosion, further threaten the structural stability of earthen buildings. Moreover, there is a need for greater local community participation and education to foster a sense of responsibility and ownership for heritage preservation (Nasidi, 2022; Salim et al., 2021). Based on the foregoing, the study identifies and intends to cover this gap, owing to these challenges and ineffective conservation strategies. Kano can protect its rich cultural heritage for future

generations, ensuring that its historical legacy continues to thrive in the modern era.

This study extensively examines the different policies and techniques employed in the conservation of HUL in Kano Metropolis. Different heritage conservation policies in Nigeria and international treaties and conventions regarding cultural heritage applicable in the country were reviewed, which extend by exploring conservation techniques and interventions applied in the selected historic landscapes.

1.1 Hausa Traditional Architecture and Identity

It is widely acknowledged that, in order for a community, city, country, or people to set themselves apart from others in the region, they utilize cultural heritage as a central subject in significant architectural developments. These projects aim to create a distinct sense of place and position their cities prominently on the cultural map (Sayo et al., 2017). Each ethnic group or civilization, at different points in time, contributes specific architectural styles reflective of their respective cultures (Umar et al., 2019). The identification of a society's culture is discerned through its various appearances and manifestations (Teijgeler, 2006), including architecture, art, and language. Consequently, the analysis in the cultural field is intricately linked to the examination of these cultural manifestations (Aliyu & Haruna, 2021).

The word "Hausa" pertains to the inhabitants of Northern Nigeria who speak the language Hausa and share a significant social and cultural system. Predominantly followers of Islam, the Hausa people have cultivated a culture and tradition that has propelled them to excel in various creative endeavors. In terms of architecture, the Hausa people in northern Nigeria have expanded a distinctive system that sets them apart from other regional settlements. Recognized for its creative work and genuine physical appearance, their architectural style exhibits distinctive compositional qualities that clearly reflect their folk nature and incorporate both religious and cultural beliefs. Accordingly, this traditional architectural approach has positioned them uniquely amongst other tribes in Nigeria (Aliyu & Haruna, 2021). The built features and overall physical appearances of their structures directly mirror the expressions of the people (Noel, 2013). This approach is transmitted in the form of principles, beliefs, attitudes, and conventions of behavior derived from the past, contributing to shaping their cultural context (Yusuf et al., 2023b).



Figure 1. Northern knot (*Dagin Arewa*)

Source: Field work, 2023

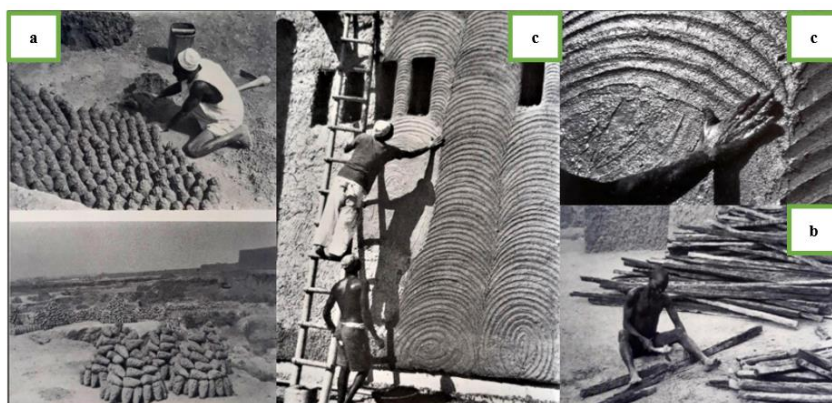


Figure 2. Hausa local building materials (a) bricks (*Tubali*); (b) reed rafters (*Azara*); (c) plaster (*Makuba*) (Salim et al., 2021)

Since the early stages of Hausa creative expression as a cultural entity, a distinctive cultural symbol has emerged, commonly referred to as the Northern knot or "Arewa symbol." It is shaped like a star, often employed in historical buildings (Figure 1). This symbol serves to identify Hausa products in historical contexts, architectural designs, and other traditional embroidery (Aliyu & Haruna, 2021; Carpo, 2007). Key elements that play a crucial role in signaling Hausa identity include the parapet (*Rawani*), pinnacles (*Zankwaye*), and the use of local plaster (*Makuba*, now often engraved in a modern style) (The subgraph (c) of Figure 2).

1.2 Heritage Conservation Policies in Nigeria

In Nigeria, legislation and policies concerning cultural heritage are dispersed across various laws rather than consolidated into a single comprehensive statute (CCP, 2020). These laws establish diverse institutions and agencies responsible for the regulation, conservation, and management of cultural heritage within the country.

1.2.1 The 1999 Constitution of the Federal Republic of Nigeria (as amended)

The 1999 Constitution grants the federal government the exclusive authority to legislate for the establishment and regulation of entities responsible for: (i) identifying, collecting, protecting, preserving, or supervising ancient and historical monuments, records, and archaeological sites recognized by the National Assembly as having national significance; (ii) managing museums and libraries, with the exception of those established by state governments.

1.2.2 The NCMM Act of 1979

Enacted on September 28, 1979, this act repealed the Antiquities (Prohibited Transfers) Act and the Antiquities Act (as amended). It established the NCMM as the primary body for the administration, management and regulation of monuments, antiquities, and national museums. The NCMM's roles include:

- (i) Establishing and maintaining the national museum and related outlets.
- (ii) Recommending to state governments or authorities the management and establishment of museums, and the safeguarding of monuments and antiquities not declared national.
- (iii) Approving and possibly withdrawing approval for privately established museums.
- (iv) Managing the presentation, conservation, documentation, and collection of cultural heritage to the public for education and entertainment.
- (v) Conducting research in ethnography, archaeology, and related fields, independently or in collaboration with university-based institutes or departments.

The term "cultural property" is not explicitly defined in Nigerian laws, but under the NCMM Act (NCMM, 2019), it is referred to as "antiquity," including: (a) artifacts or relics from early human settlement; (b) items of archaeological significance or their locations; and (c) indigenous works of art or craft predating 1918, such as figures, statues, carvings, and more.

1.2.3 The National Gallery of Art Act of 1993

Effective from August 25, 1993, this legislation, later amended in 2004, established the National Gallery of Art to serve as a repository for modern visual art in Nigeria. It promotes research, education, and appreciation of art and artistic works, fulfilling a cultural policy recommendation for promoting creative visual art.

1.2.4 The NCAC Act of 1975 (Amended 2004)

Established by Decree No. 3 of 1975 and amended in 2004, this act formed the NCAC. The council aids the federal government in planning, coordinating, and promoting arts and cultural activities. Its functions include promoting Nigerian arts and culture nationally and internationally, assisting the NCMM in preserving artistic works and cultural monuments, and organizing exhibitions of visual, performing, and literary art.

1.2.5 The National Archives of Nigeria Act

Repealed in 1992 and later enacted as Decree No. 30, this act, now part of the Laws of the Federation of Nigeria, 2004, places the National Archives in charge of the permanent custody, care, and control of federal archives. It complements the NCMM's role in managing cultural heritage, collecting, preserving, documenting, and presenting Nigeria's contemporary plastic arts, and educating the public on documentary heritage.

1.3 Localized Studies and Comparable Case Studies

The applicability of broader conservation policies and frameworks to local contexts, such as Kano, often faces limitations due to a lack of specific studies. However, localized studies and comparable case studies were provided for valuable insights.

1.3.1 Conservation efforts

Kano, one of Nigeria's oldest cities, has a rich history dating back to the 10th century. Notable conservation efforts include the restoration of the ancient city walls and gates, which have faced challenges such as erosion, neglect, and urban encroachment. Localized studies (Adamu, 2020; Salim et al., 2021; Sayo et al., 2017; Tijjani & Aliyu, 2017; Umar et al., 2019; Young et al., 2021) emphasize the significance and the need for regular conservation to prevent further degradation.

1.3.2 Conservation challenges in northern Nigeria

Similar to Kano, other regions in northern Nigeria face challenges in heritage conservation, including the impact of weather, human activities, and inadequate funding, as highlighted in several studies (Adebayo, 2015; Agbabiaka et al., 2021; Akinbamijo & Alakinde, 2013; Ali & Agbu, 2021; Nasidi, 2022; Omipidan, 2017; Young et al., 2021). For instance, the Sokoto Caliphate's historical sites have been the subject of studies highlighting the need for community involvement and sustainable conservation practices (Umar & Yusuf, 2019).

1.3.3 International case studies

Comparable case studies from similar regions, such as Timbuktu in Mali and ancient sites in Sudan, provide lessons on managing environmental factors and leveraging international support for conservation. These regions, like Kano, have faced challenges related to harsh climatic conditions and the need for materials and techniques that are both sustainable and locally appropriate (Correia, 2016). Other global case studies underline the quest for conservation comprises (Bandarin & Van Oers, 2012; Gulotta & Toniolo, 2019; Hassani, 2015).

2. Methodology

This study is descriptive and exploratory in nature and relies exclusively on secondary data sources, especially conducting a thorough examination of relevant literature, documentaries and the analysis of archival records on the conservation and preservation of historical monuments. It also utilised the researchers' prior knowledge of the study area and case studies and the observatory information on the conservation methods and techniques being applied to preserve these historic buildings and sites for socio-cultural and economic importance. Relevant documents were identified and collected, including national and international heritage conservation policies, legislation, scholarly articles, and reports on conservation techniques and interventions in Kano. Initial coding involved breaking down the data into discrete parts to identify key concepts and themes. For example, codes such as "policy framework," "traditional techniques," and "modern challenges" were used. The codes were then grouped into categories to establish relationships between them. This stage involved linking codes related to policies and those related to conservation techniques to see how they interact and impact the overall conservation efforts. Key sources included the 1999 Constitution, the NCMM Act, the National Gallery of Art Act, the NCAC Act, and international treaties ratified by Nigeria.

A pilot study was conducted in April 2023 at key historical sites in Kano Metropolis. Six major historical monuments were purposefully selected within the ancient city of Kano because they are community- and tourism-oriented or symbolic as HUL based on cultural value, material form, and functional aspects of the ancient city of Kano. This includes three buildings and three archaeological sites identified by the UNESCO, NCMM and State Culture and History Bureau, respectively. Subsequent field inventories of the city walls, Dye Pit, Dala Hill and Gidan Makama were conducted in June 2023 to gather first-hand data on the current state and conservation efforts of these sites.

To ensure the reliability and validity of the findings, multiple sources of data were used as employed by Yusuf et al. (2023a), including cross-referencing legislative documents with scholarly articles and reports on conservation interventions. The analysis was reviewed by experts in heritage conservation to verify the accuracy and relevance of the identified themes and categories.

3. Results

3.1 Historic Sites and Cultural Buildings Within Kano Ancient City

Kano's ancient cultural landscape features a well-organized design and a captivating history that attracts global interest, making it a leading repository of cultural sites and events in West Africa (Yusuf et al., 2023c). As one of the largest cities in West Africa, Kano is rich in cultural heritage. The city contains numerous historic sites, buildings, and monuments of significant spiritual, social, economic, and political importance, such as the magnificent city wall, Emir's Palace, Gidan Makama, Dala Hill, Kano Dye Pits, and Kurmi Market. Natural and human factors led to the deterioration of these historical monuments, which was exacerbated by their earthen structures and aging, necessitating conservation efforts. Consequently, various preservation methods have been employed over time, reflecting advancements in skills and technology.

3.1.1 Ancient Kano city wall and gates

Historically, city walls have served as fortifications to protect cities or settlements from aggressors (Umar & Yusuf, 2019). City gates, on the other hand, provide entry points to these walled cities. These walls and gates were constructed using materials like mud, bricks, wood logs, metals, and raffia (Adamu, 2020; Adeyemi & Bappah, 2011). Today, these structures serve additional functions, including economic, tourism, aesthetic, and cultural purposes, beyond their original defensive role. They now play a central role in welcoming visitors.

Nigeria, located in West Africa, has a historical record of constructing city walls and gates in cities like Kano, Daura, Katsina, and Zaria, all serving protective purposes. The ancient Kano city wall, a historical earth structure with a 14-km radius, includes gates dating back to the same era, regulating movement in and out of the city (Yusuf et al., 2023c). Initiated by Sarki Gijimasu from 1095 to 1134, the wall's construction was concluded in the mid-1400s during the supremacy of Zamnagawa (Yusuf et al., 2023a). In the 1600s, the walls were more extended to cover approximately 24 km² (the subgraph (a) of Figure 3), forming a broadly triangular outline that delineates the boundaries of ancient Kano city. The wall stands 30 to 50 feet in height and is 40 feet thick at the base, incorporating 13 gates. Following the British seizure of the city, two additional gates were added.

This historically significant wall, built to safeguard the inhabitants from invaders, holds monumental importance (Adamu, 2020; Minjibir, 2012). Designated a national monument by the NCMM in 1959, it was also added to UNESCO's Tentative List in 2007. Often described as the most impressive monument in West Africa, the wall gained this recognition due to its formidable nature. In 1903, after British forces took control of Kano, General-Governor Fredrick Lugard of the Colony and Protectorate of Nigeria reported that the fortifications' extent and strength surpassed expectations. He remarked, "Needless to say, I have never seen or even imagined anything like it in Africa."

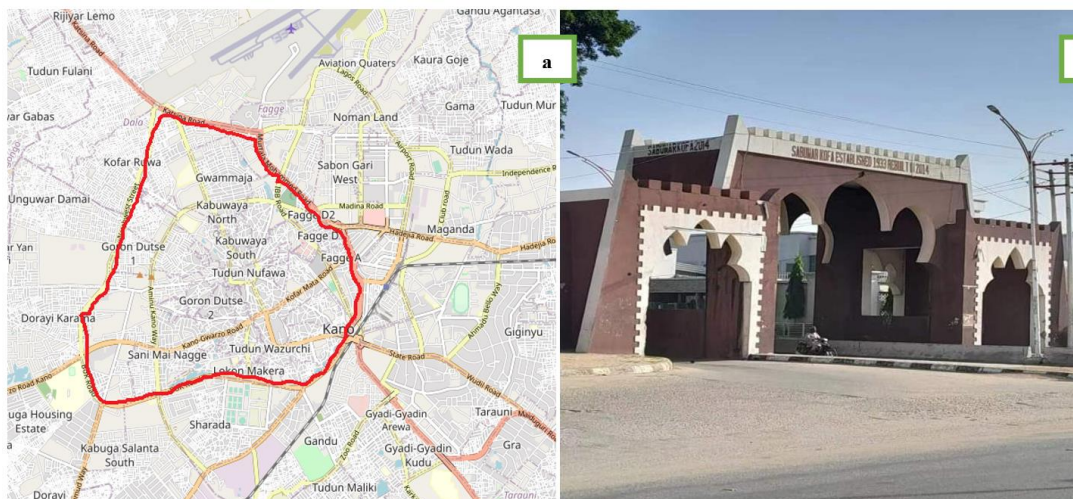


Figure 3. (a) Illustration map of the ancient city wall; (b) gate of Kano (renovated in 2014) (Yusuf et al., 2023a)

3.1.2 Emir's Palace

Built between 1479 and 1482 by Muhammadu Rumfa, the Kano Emir Palace is located in the Hausaland of northern Nigeria within the Kano metropolis city wall (Barau, 2014; Liman & Adamu, 2003). To this day, the palace remains inhabited by a perpetual community within its fortified boundaries, serving sociocultural, religious and administrative functions, comprising court sessions, durbar festivals, and Islamic congregational events. Constructed using local materials like building bricks (*Tubali*), local plaster (*Makuba*), and wooden rafters (*Azara*), the palace exemplifies Hausa traditional architecture (Bilyaminu, 2017; Dmochowski, 1990; Nura, 2014; Salim et al., 2021).

Earthen structures are particularly prone to quicker decay due to rainfall and the delicate nature of their materials (Correia, 2016). Consequently, the palace has undergone significant modifications and rehabilitation to meet modern demands (Dmochowski, 1990) (Figure 2 and Figure 4).

3.1.3 Gidan Makama

Gidan Makama, or Makama's House, is a 15th-century historical building located in the heart of Kano city, opposite the Emir's Palace. Designated as a national monument by the NCMM (Murray, 1967), this building serves as both a national monument and a museum, showcasing the diverse and extensive cultural heritage of the Hausa people through traditional architectural mastery (Sayo et al., 2017). The building's features include a wide range of ancient architectural forms significant to the local population, making it a main tourist attraction appealing for both international and local visitors (Figure 5).



Figure 4. Transition of Kano palace monument (a) palace entrance in earthen form (Duckworth, E.H. 1935 collections, Herskovits Library of African Studies); (b) reconstructed palace entrance modern block form, reviving the cultural elements and identity (Yusuf et al., 2023a)



Figure 5. Gidan Makama Museum, Kano
Source: Field work, 2023

3.1.4 Dala Hill

Dala Hill, or "Dutsen Dala" in the local language, is an archaeological site dating back to the 10th century AD, marking an ancient settlement. It is key to the evolution of Kano city and a crucial reference point for the development of Hausa Kingdoms, societies, and cultures, influencing early indigenous civilizations in the Savannah zone of western Africa (Yusuf et al., 2023c). Dala Hill is a significant tourism resource (Agbabiaka et al., 2021), attracting local and international tourists for exploration and educational experiences (Omipidan, 2017), offering a panoramic view of Kano (Figure 6).

3.1.5 Kurmi Market

Kurmi Market is one of Africa's oldest and largest local markets (Abba et al., 2018). It initially served as an international market, facilitating the exchange of North African and European goods for local products via trans-Saharan trade. With a history spanning nearly six centuries, the market gained notoriety for its involvement in the slave trade (Moughtin, 1964). Today, it continues to attract buyers with its diverse offerings, including textiles, spices, and traditional items, laid out in lanes featuring narrow alleys and attracting local and international tourists (Figure 7).



Figure 6. Dala Hill, Kano stair cases for climbing to the top of the hill
Source: Field work, 2023



Figure 7. Typical street view of Kurmi Market exhibiting its primitive form and pattern of narrow alleys in 1935
(Duckworth, E.H. 1935 collections, Herskovits Library of African Studies)

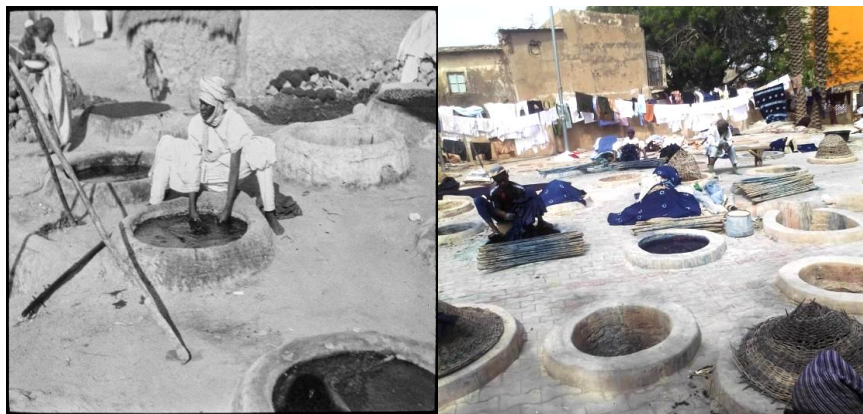


Figure 8. (a) Historic Kano Dye Pits in the early 1930s (Duckworth, E.H. 1935 collections); (b) preserved Dye Pits

Source: Field work, 2023

3.1.6 Dye Pits

Founded in 1498 by Muhammadu Dabosa, an immigrant from Rimaye in present-day Katsina State, the Kofar Mata dyeing center has a rich history (Young et al., 2021). Dabosa engaged in cloth dyeing as a family craft alongside farming. The business has remained in the family and is now a prominent historical monument in Kano State, recognized by the History and Culture Bureau. The dyeing center attracts national and international guests and tourists (Figure 8).

3.2 Conservation Techniques of Historical Monuments in Kano City

Conservation of historical buildings/monuments in Kano ancient city was basically on traditional methods or techniques. This approach involves adhering to the principles of utilizing materials and construction methods that align with those of the deteriorated structures during the conservation process (Okpalanozie & Adetunji, 2021). Despite the emphasis on innovative methods by the International Council on Monuments and Sites (ICOMOS) Charter for the conservation and structural restoration, analysis of architectural heritage, emerging innovative methods are not commonly applied during the documentation, diagnosis, and treatment stages of conservation (Gbadegesin & Osagbale, 2014). This omission results in inefficient and inadequately managed heritage conservation (Table 1). The integration of technologies as a supplement to traditional methods enhances the efficacy of both approaches for conservation purposes, aiding in determining the precise material structure and cause of decay and proposing environmentally friendly restoration methods (Fais et al., 2018; Urzi et al., 2010). In Kano, four major conservation interventions were identified, including replacement, reconstruction/rehabilitation, enveloping, and replastering (Table 2). The minor treatments include fencing, removal of weakened Azara and fumigation in the case of insect attacks, such as termites, among others. The construction of staircases in Dala Hill to enable climbing to the top of the hill to enjoy the aerial outlook of the city is also identified as one of the remarkable interventions by the state to make efficient use of the archaeological site for cultural tourism development.

Table 1. Conservation interventions of the HUL based on previous studies

No.	HUL	Interventions	Descriptions	Sources
1	Ancient Kano city walls and gates	Structural reinforcement	The ancient city wall, built primarily of earthen materials, has been reinforced with modern materials such as bricks and concrete to maintain its integrity against natural degradation and human impact.	Adamu (2020); Adeyemi & Bappah (2011); Ali & Agbu (2021); Minjibir (2012); Tijjani & Aliyu (2017)
		Protective coatings	Application of protective coatings on the wall surfaces to prevent erosion caused by rain and wind.	
		Regular maintenance	Routine inspections and maintenance work to address cracks and other signs of deterioration before they become significant issues.	
		Historical preservation programs	Collaboration with national and international preservation organizations, such as UNESCO, to ensure adherence to global conservation standards.	
2	Emir's Palace	Restoration of earthen materials	Use of traditional building materials like <i>Tubali</i> (bricks), <i>Makuba</i> (local plaster), and <i>Azara</i> (wooden rafters) in restoration projects to maintain the palace's historical authenticity.	Adamu (2020); Dmochowski (1990); Minjibir (2012); Salim et al. (2021)
		Modernization with sensitivity	Incorporating modern amenities and structural reinforcements in a manner that respects and preserves the palace's historical and cultural significance.	
		Environmental protection	Installation of drainage systems to protect the earthen structure from water damage.	
3	Gidan Makama	Architectural documentation	Detailed documentation of the building's architectural features to guide restoration efforts and ensure accurate replication of traditional techniques.	Sayo et al. (2017)
		Community involvement	Engaging local artisans and craftsmen skilled in traditional building methods for conservation projects, thereby preserving indigenous knowledge and techniques.	
		Museum conversion	The conversion of Gidan Makama into a museum helps in regular maintenance and generates funds through tourism for its upkeep.	
4	Dala Hill	Site stabilization	Measures to stabilize the hill and prevent erosion, such as planting vegetation and constructing retaining walls.	Agbabiaka et al. (2021); Falola (2021)
		Archaeological excavations	Conducting controlled archaeological excavations to unearth and preserve artifacts while ensuring minimal disturbance to the site.	
		Tourist pathways	Developing pathways and signage to manage tourist flow and minimize wear and tear on the hill.	

5	Kurmi Market	Structural repairs	Ongoing repairs to maintain the structural integrity of market stalls, focusing on preserving the market's historical layout and appearance.	Abba et al. (2018); Ibrahim (2014)
		Heritage signage	Installation of informational signage to educate visitors about the market's history and significance, fostering a sense of value and encouraging preservation.	
		Cultural preservation programs	Initiatives to preserve traditional trading practices and crafts that are part of the market's heritage.	
6	Dye Pits	Traditional techniques	Preservation of traditional dyeing techniques and materials to maintain the historical authenticity of the dye pits.	Young et al. (2021); Iliyasu (2015)
		Infrastructure improvements	Enhancements to the surrounding infrastructure, such as pathways and viewing platforms, to facilitate tourism while protecting the dye pits.	
		Water management systems	Implementation of systems to manage and recycle water used in the dyeing process, ensuring sustainability and reducing environmental impact.	

Table 2. Conservation techniques of HUL within ancient Kano city

No.	Historical Monument(s)	Conservation Techniques Applied			
		Reconstruction/rehabilitation	Replacement	Re-coating	Enveloping
1	Kano city walls and gates	•	•	•	
2	Kano Emir's Palace	•	•		•
3	Gidan Makama		•	•	•
4	Dala Hill	•		•	•
5	Kano Dye Pits	•			
6	Kurmi Market	•		•	

Note: These conservation techniques aim to preserve the historical and cultural significance of Kano's monuments while adapting to modern challenges and opportunities.



Figure 9. A section of the reconstructed ancient Kano city wall

Source: Field work, 2023



Figure 10. Replacement techniques in the conservation of cultural buildings (a) replacement of Makuba with cement (Salim et al., 2021); (b) replacement of motif with engraving style

Source: Field work, 2023

In this context, reconstruction refers to the repair of significant parts; replacement means changing or renewing to a fresh appearance; re-coating denotes mending of the outer membranes by plastering; and enveloping implies protecting the old structure by encasing it in a new form to assign a role in performance. As such, the findings (Table 1 and Table 2) reveal that the conservation techniques for Kano ancient city walls and gates entail re-coating by application of *Makuba* mixture in some parts. It also involves city wall reconstruction of about 300 meters length, 2.8 meters width and 5.95 meters high along BUK Road at Sabuwar Kofa (Figure 9); and rehabilitation of some of the city gates, including Kofar Nassarawa, Sabuwar Kofa (The subgraph (b) of Figure 3), Kofar Dukawuya, Kofar Kabuga, Kofar Gadon Kaya, and Kofar Na'isa (Tijjani & Aliyu, 2017). So far, eight gates were rebuilt to modern form. Reconstruction, replacement and enveloping were the major conservation techniques utilised in the Kano Emir's Palace and Gidan Makama Museum, respectively. In the palace, various earthen structures underwent reconstruction using cement concrete, embodying a contemporary aesthetic inspired by spirituality and a sense of connection to the palace. The replacement of *Makuba* with a cement design motif and the replacement of the design motif with modern engraving design was notable within the palace and Gidan Makama Museum (The subgraphs (a) and (b) of Figure 10). This treatment technique has been widely used in Nigeria, most especially across Hausaland. In the study of Omisore et al. (2009), substitution of structural constituents was the main treatment strategy applied in the conservation effort of different cultural properties in Ile-Ife, Nigeria.

4. Discussion

This section interprets the results from the perspective of previous studies and the working hypotheses, and reports the research findings and implications in the broadest context possible.

4.1 Policy Implications on Conservation Efforts in Kano City

Table 3. Suggested changes and new policies to enhance the conservation of historical monuments

No.	Policy Change	Proposal	Implementation
1	Integrated conservation and development policy	Develop a policy that integrates urban development with heritage conservation, ensuring that economic development plans incorporate the preservation of historical sites.	<ul style="list-style-type: none"> • Establish a task force comprising urban planners, conservation experts, and policymakers to draft guidelines. • Conduct public consultations to ensure community support and awareness.
2	Enhanced funding mechanisms	<ul style="list-style-type: none"> • Increase funding for conservation efforts through government budget allocations, grants, and public-private partnerships. • Introduce a heritage tax levied on businesses benefiting from tourism. 	<ul style="list-style-type: none"> • Create a dedicated conservation fund managed by the NCMM. • Engage international organizations and NGOs for additional financial support and expertise.
3	Stricter enforcement and monitoring	Develop programs that involve local communities in the conservation process and educate them about the importance of preserving cultural heritage.	<ul style="list-style-type: none"> • Partner with local schools, community groups, and media outlets to disseminate information. • Establish community stewardship programs where locals participate in maintenance activities.
4	Sustainable tourism policies	<ul style="list-style-type: none"> • Implement sustainable tourism practices that balance visitor influx with the preservation of heritage sites. • Limit the number of visitors and promote off-peak tourism. 	<ul style="list-style-type: none"> • Work with tourism operators to develop eco-friendly tour packages. • Install infrastructure that minimizes environmental impact, such as designated walkways and visitor centres. • Provide incentives, such as tax breaks and grants, for developers who incorporate conservation into their projects.
5	Adaptive reuse policies	Encourage the adaptive reuse of historical buildings for contemporary purposes, ensuring their preservation while making them economically viable.	<ul style="list-style-type: none"> • Facilitate workshops and training for architects and developers on adaptive reuse techniques.

Current policies on conservation in Nigeria, including those that affect Kano city, have both positive and negative impacts on the preservation of historical monuments:

(i) NCMM policies: The NCMM is responsible for the preservation of national monuments. Policies under NCMM mandate periodic maintenance and conservation activities. However, due to limited funding and bureaucratic delays, the implementation of these policies is often inconsistent, leading to the deterioration of

monuments.

(ii) Cultural heritage laws: Nigeria's cultural heritage laws aim to protect historical sites but lack robust enforcement mechanisms. This results in unauthorized modifications and encroachments on heritage sites, undermining conservation efforts.

(iii) Urban development policies: Urbanization policies in Kano often prioritize economic development over heritage conservation. Rapid urban expansion without integrating conservation considerations leads to the encroachment and degradation of historical sites.

(iv) Tourism policies: Existing tourism policies recognize the potential of heritage sites to attract tourists but fail to allocate adequate resources for their maintenance. As a result, increased tourist activity sometimes accelerates the wear and tear of these sites.

Table 3 suggested specific policy changes and new policies to enhance the conservation of historical monuments in Kano city.

More so, for example, historic architecture can be preserved while encouraging development in designated growth areas through the use of TDR. Historic districts such as the area around Gidan Makama and native buildings in Kano municipality can be designated as "sending areas" where development rights are limited or restricted. Property owners in these areas could sell their development rights to such "receiving areas" as Ibrahim Taiwo Road in Fagge local government where more intensive development is permitted. Similarly, a property owner in the historic district who wants to renovate their building might find it financially challenging. By selling their TDR to developers in development-intensive areas (where higher floor area ratios are allowed), the owner can receive compensation for maintaining the building's historical integrity. In this manner, historic architecture can be preserved while allowing for new developments elsewhere. TDR is used in combination with other tools in other parts of the world, such as Porto Alegre, to preserve historic areas and promote land value capture.

4.2 Conservation Techniques and Interventions

Efforts to conserve historical monuments in Kano city encompass a variety of techniques tailored to each site's unique characteristics. The ancient Kano city walls and gates have been structurally reinforced with modern materials, coated for protection against erosion, and maintained regularly, supported by historical preservation programs in collaboration with organizations like UNESCO. The Emir's Palace restoration uses traditional materials for authenticity, integrates modern amenities sensitively, and includes environmental protection measures like drainage systems. Gidan Makama's conservation involves detailed architectural documentation, community engagement of local artisans, and its conversion into a museum, which aids in its maintenance and funding. Dala Hill sees site stabilization through vegetation and retaining walls, controlled archaeological excavations, and development of tourist pathways. Kurmi Market focuses on structural repairs, heritage signage for educational purposes, and cultural preservation programs to maintain traditional trading practices. Lastly, the Kano Dye Pits are preserved through the use of traditional dyeing techniques, infrastructure improvements for tourism, and water management systems to ensure sustainability.

5. Conclusions

This study extensively examined the different policies and techniques employed in the conservation of HUL in Kano Metropolis. As such, this study has achieved its goal as it reviewed various heritage conservation policies in Nigeria, as well as international treaties and conventions regarding cultural heritage applicable in the country. It also explored the conservation techniques and interventions applied in selected historic landscapes within Kano.

As for policies and legislation, this study highlights that heritage conservation policies in Nigeria are dispersed across various legislations, creating a fragmented framework for the management and protection of cultural heritage. The 1999 Constitution, the NCMM Act of 1979, the National Gallery of Art of 1993, and the NCAC of 1975 are some of the key legislations guiding heritage conservation. Additionally, Nigeria has ratified several international conventions that support heritage conservation efforts. Whereas for conservation techniques, it was found in this study that the conservation techniques applied in Kano are predominantly traditional, focusing on the use of local materials and historical building methods. These techniques, while preserving the authenticity of the structures, face challenges in addressing modern environmental and human-induced deterioration. In addition, it was identified in this study that the integration of modern conservation techniques is limited, impacting the long-term sustainability of the HUL.

Concisely, various conservation interventions have been implemented in Kano, targeting key historic sites such as the city walls, Emir's Palace, and Gidan Makama. However, these efforts are hindered by factors such as inadequate funding, a lack of skilled personnel, and insufficient community involvement. The aging nature of the structures and the harsh environmental conditions further exacerbate the degradation of these historic sites.

This study provides comprehensive suggestions for improving the conservation practices of HUL, espousing cultural tourism in Kano Metropolis. This approach aims to preserve the cultural and historical significance of

these landscapes while ensuring their long-term sustainability. Based on the findings, the practical implementation should cover strengthening collaborations between the NCMM and international conservation bodies, investing in training programs for conservation professionals, lobbying for legislative support to pass new conservation laws, initiating pilot conservation projects in some selected sites, and regularly engaging stakeholders. This study recommends incorporating community participation in decision-making processes and adopting innovative methods to present extensive opportunities and benefits for enhancing the effectiveness of conservation efforts. The lack of involvement of local communities in conservation decision-making and their limited awareness of the significance of these monuments and sites have contributed to a perception that their protection is solely the responsibility of government. Consequently, this has resulted in the indiscriminate destruction and conversion of certain sections of the city wall into refuse dump sites by the private developers and local population, respectively. Additionally, it is recommended that the state government, through the Kano State Urban Planning Development Authority (KNUPDA), enforce regulations to establish a buffer area, preventing the construction and encroachment of buildings or any other form of development along the city walls. TDR can equally be used to disincentivise transformation in heritage areas of Kano and similar locations in the country.

Data Availability

The data used to support the research findings are available from the corresponding author upon request.

Conflicts of Interest

The authors declare no conflict of interest.

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