



DOI: <https://doi.org/10.38027/ICCAUA2025EN0234>

## Revitalizing Spaces: Balancing Preservation and Modernization in Historic Buildings

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### Abstract

**Received:** 14 February 2025  
**Revised:** 19 May 2025  
**Accepted:** 18 June 2025  
**Available online:** 5 July 2025

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This article has been selected and peer-reviewed for publication in this journal as part of the 8th International Conference of Contemporary Affairs in Architecture and Urbanism, held on 8–9 May 2025 in Alanya, Türkiye.

This study explores the revitalization of historic buildings while balancing the need for modernity and preservation. Using a case study approach, the research examines three significant historic sites: Owo Palace, Deji of Akure's Palace, and Jaekel House in Lagos. The analysis focuses on the preservation challenges posed by environmental conditions, material deterioration, and urban encroachment, alongside the need to integrate modern utilities and functions without compromising the cultural and historical integrity of structures. The findings highlight the effectiveness of stakeholder engagement, including collaboration between traditional authorities, local artisans, and conservation experts, in ensuring that modernization efforts were culturally sensitive and functionally sustainable. This study concludes that a holistic approach to preservation and modernization, guided by regulatory frameworks and community involvement, is essential for the transformation of historic buildings to meet contemporary needs while preserving their cultural and architectural heritage.

**Keywords:** Historic Buildings; Conservation Experts; Revitalization; Preservation.

### 1. Introduction

Throughout the annals of human civilization, cities have served as vibrant tapestries, woven from the threads of architectural heritage and the aspirations for progress (Amen and Kuzovic 2018a; Amen and Nia 2021; Aziz Amen 2022). Within the heart of these urban landscapes, historic buildings stand as enduring testaments to the ingenuity and cultural legacy of bygone eras. However, the relentless march of modernity often collides with the preservation of these treasured landmarks, creating a delicate tension between the need for adaptation and the desire to safeguard our architectural treasures (Tweed & Sutherland, 2007). Preservation itself is a dynamic evolving process that lies at the heart of revitalizing spaces, where the challenge lies in striking a harmonious balance between respecting the past and embracing the future. Historic buildings are not mere static relics but living entities that must adapt to the ever-changing needs of society while retaining their cultural significance and intrinsic character. It is within this context that this study explores innovative strategies for breathing new life into these architectural treasures, bridging the gap between preservation and modernization.

This delicate balance is a global challenge, as cities around the world grapple with the task of honoring their rich architectural heritage while simultaneously accommodating the demands of the present and future (Bahishti, 2013). In Nigeria, this challenge is acutely felt, as the nation's rapid urbanization and development often significantly clash with the preservation of its historic built environment.

By delving into this multifaceted discourse, this research promises to uncover novel approaches that celebrate the rich tapestry of our architectural heritage while simultaneously embracing the demands of contemporary living. Through carefully examining case studies, design methodologies, and cutting-edge technologies, this study endeavors to contribute to the ongoing discourse on adaptive reuse, offering insights into harmonizing the past and the future within the built environment.

### 2. Revitalizing Historic Spaces

Revitalizing historic spaces is not merely an exercise in architectural preservation but a profound act of cultural stewardship (Brombaugh, 2017). It involves balancing the preservation of historic fabric and character with the integration of modern functionality, sustainability, and accessibility. This pursuit necessitates a holistic understanding

of the intricate interplay between heritage conservation, urban regeneration, and the ever-evolving socioeconomic landscape (Ni & Karlsson, 2022).

While there is a growing body of literature on the preservation and revitalization of historic buildings, there remains a significant gap in understanding the most effective strategies for balancing preservation and modernization. Existing research often focuses on individual case studies or specific regions, leaving a void in comprehensive, multidisciplinary approaches that consider the broader implications of revitalization on urban sustainability and community well-being. The challenge lies in developing strategies that reconcile the seemingly conflicting goals of preservation and modernization, enabling historic buildings to adapt to contemporary demands while retaining their essential character and significance (Semmes, 2009). Achieving this balance requires a multidisciplinary approach that considers not only the physical aspects of historic buildings but also their intangible values, social dimensions, and potential for contributing to sustainable urban development (Getty Conservation Institute, 2012). Thus, as cities continue to evolve and expand, the tension between preserving the past and accommodating contemporary needs often leads to the neglect or demolition of historic structures (Bullen & Love, 2011). This erosion of built heritage not only diminishes the cultural fabric of urban environments but also represents a lost opportunity for sustainable development and the effective utilization of existing resources.

By addressing this challenge, this research has the potential to inform and inspire architects, urban planners, and policymakers alike, fostering a deeper appreciation for the rich narratives embedded within our built heritage while charting a course toward a more sustainable and inclusive future. This aligns with the broader goals outlined in the United Nations Educational, Scientific and Cultural Organization's (UNESCO) recommendation on the Historic Urban Landscape (UNESCO, 2011), which advocates for the integration of urban heritage conservation strategies into broader sustainable development frameworks.

### **2.1. The Concept of Revitalization**

The preservation and revitalization of historic buildings have emerged as critical endeavors in the architectural discourse, as communities worldwide strive to strike a delicate balance between safeguarding their cultural heritage and adapting to the evolving needs of modern society. In Nigeria, a nation rich in architectural diversity, this challenge is particularly resonant, as the country's historic structures serve as tangible manifestations of its multifaceted cultural identity.

Revitalizing historic buildings presents opportunities for adaptive reuse, breathing new life into these structures while preserving their architectural and historical significance. However, this process demands careful consideration of how to integrate modern amenities and technologies without compromising the integrity of the original design and materials. Furthermore, revitalization efforts must be guided by principles of sustainability, ensuring that modernization does not come at the expense of environmental degradation or resource depletion. Incorporating sustainable practices, such as energy efficiency, water conservation, and the use of eco-friendly materials, is crucial in preserving these historic spaces for future generations.

In Nigeria, the challenge is further amplified by the need to balance the preservation of diverse architectural styles, including the unique "Brazilian Architecture" that emerged from the cultural exchange between Brazil and West Africa. This architectural style represents a significant part of Nigeria's cultural heritage that must be safeguarded.

### **2.2. Revitalization in Architecture**

Revitalization in architecture is a multifaceted process that involves the restoration, adaptation, and reinvigoration of existing built structures to meet contemporary needs while preserving their historical and cultural significance. Sustainable conversion and revitalization of old buildings have been recognized as effective methods to protect architectural heritage (Turnšek et al., 2020). This approach not only safeguards the historical value of structures but also contributes to sustainable development by repurposing existing resources.

In the revitalization of architectural heritage, community engagement and cultural preservation are essential considerations for retaining and revitalizing historic sites. By involving residents in the revitalization process, the endeavour can promote social cohesion and economic benefits.

### **2.3. Balancing Heritage and Modernization in Nigerian Architecture**

The evolution of architectural styles in Nigeria, influenced by colonial, tropical, and postcolonial styles, reflects a fusion of traditional values with modern influences (Adeyemo, 2023). This juxtaposition necessitates a nuanced approach to architectural design that respects the historical significance of indigenous architectural forms while accommodating contemporary needs and preferences. Preserving architectural heritage in the face of modernity involves a multidimensional perspective. Studies on vernacular architecture emphasize the importance of conserving cultural values embedded in traditional architectural practices (Olanrewaju, Babarinde, & Salihu, 2022). The integration of traditional and modern architectural elements, as seen in projects like the Taman Samarendah in Samarinda City, Indonesia, showcases a harmonious blend of old and new, catering to both cultural heritage and functional requirements (Cuervo-Cazurra, Mudambi, & Pedersen, 2017). However, the transition towards modernization poses risks to architectural heritage. The replacement of vernacular architecture with modern buildings threatens the extinction of traditional architectural styles (Zhang, & Li, 2022). Additionally, the irreversible damage caused by fixed patterns of external protection and internal reconstruction highlights the need for sustainable preservation strategies that balance conservation with adaptation (Liu, 2023). Efforts to balance heritage and modernization extend beyond Nigeria, with global implications for architectural conservation. Studies on sustainable reuse of Modern Movement heritage buildings in Scotland and Italy underscore the challenges and solutions in

repurposing historical structures to meet contemporary needs (Ariffin, Zahari, & Hanafiah, 2020). Furthermore, the discourse on industrial heritage conservation in the Arab world, such as hydroelectric plants, emphasizes the importance of developing guidelines for preserving technological innovations of the past (Afifah & Kurniawan, 2022).

#### 2.4. An Overview of Historic Architectural Characters in Nigeria

The architectural landscape of Nigeria bears witness to a unique cultural fusion that emerged from the migration of Afro-Brazilian settlers, known as the "Agudas," in the late 19th and early 20th centuries. This migration, facilitated by the abolition of slavery in Brazil, brought with it a distinct architectural style that blended elements of Portuguese colonial architecture with traditional Brazilian and West African building techniques, creating a remarkable synthesis of cultural influences (Mustafa, 2023). The "Brazilian Architecture" or "Aguda Style," as it is commonly referred to, left an indelible mark on Nigeria's architectural heritage, particularly in the coastal regions of Lagos and the southwestern part of the country. Adeyemo, (2023) provides a comprehensive overview of this architectural style, tracing its origins to the Afro-Brazilian community that settled in Nigeria after the abolition of slavery in Brazil. Their extensive research delves into the unique blend of architectural traditions that these migrants brought with them, seamlessly combining the grandeur of Portuguese colonial architecture with the practical and sustainable building techniques of traditional Brazilian and West African design.

One of the defining features of the Brazilian Architecture style is the use of ornate stucco work, often featuring intricate patterns and motifs inspired by Brazilian and Portuguese designs. This decorative technique, known as "azulejos" or "bossages," adorned the exterior walls and facades of residential buildings, creating a visually striking and distinctive appearance (Mustafa, 2023). The intricate stucco work not only served an aesthetic purpose but also contributed to the buildings' thermal performance, providing insulation and reducing heat absorption in the tropical climate (López, Leronés, & Llamas, 2018). Nwaolikpe (2013) highlights the influence of Brazilian architectural forms on residential buildings in Lagos, where many Afro-Brazilian migrants settled. These structures often featured grand entrances, high ceilings, and large windows that promoted natural ventilation and airflow, adapting to the warm climate of the region. The integration of courtyards and verandas further reflected the Brazilian influence, providing shaded outdoor living spaces that were essential in the tropical environment (Olufemi, 2021).

In addition to residential buildings, Brazilian Architecture also influenced the design of religious structures in Nigeria. Adeyemo (2023) examines the unique features of the Brazilian Quarters Monastery in Lagos, which combines elements of Brazilian colonial architecture with local building techniques and materials. The use of clay tiles, arched windows, and intricate woodwork showcases the cross-cultural influences that shaped this architectural style. Similarly, Kim & Felkner (2018) analyzed the Brazilian influence on the design of churches in Lagos, highlighting the incorporation of elements such as bell towers, courtyards, and ornamental features that reflect the blending of architectural traditions. Ramires (2024) further explores the role of these religious structures in shaping the cultural identity and social cohesion of Afro-Brazilian communities in Nigeria.

While the Brazilian Architecture style flourished in the late 19th and early 20th centuries, its preservation and appreciation have become a subject of concern in recent years. Olanrewaju, Babarinde, & Salihu (2022) discuss the challenges faced in protecting and revitalizing these historic buildings, citing issues such as urbanization pressures, lack of maintenance, and limited resources for preservation efforts. Taher, Saleh, & Kamali (2022) echo these concerns, emphasizing the need for effective conservation strategies to safeguard this architectural heritage, including stakeholder involvement, community engagement, and the implementation of sustainable preservation practices.

Efforts have been made to raise awareness and promote the conservation of Brazilian Architecture in Nigeria. Olanrewaju, Babarinde, & Salihu (2022) explored the potential of utilizing this architectural style as a tool for sustainable urban development, emphasizing its adaptability to local climatic conditions and the integration of traditional building techniques. More recently, Kim & Felkner (2018) stressed the significance of incorporating Brazilian Architectural elements into contemporary architectural designs, fostering a sense of cultural continuity and identity in Nigerian cities. Šekularac, Ivanović-Šekularac, & Petrovski, (2020) further highlight the importance of documenting and preserving these historic structures through digital technologies, such as 3D modeling and virtual reality, ensuring that their legacy is preserved for future generations. Additionally, Ramires (2024) proposes the development of a digital database and online repository to facilitate the documentation and dissemination of information about Brazilian Architecture in Nigeria.

Researchers have also delved into the socio-cultural implications of Brazilian Architecture in Nigeria. Adebayo(2023) examines the role of this architectural style in shaping the identity and sense of belonging among the Afro-Brazilian communities in Lagos, while Ramires (2024) explores the potential for leveraging this unique heritage as a catalyst for cultural tourism and economic development in the region. Furthermore, Mustafa (2023) highlights the significance of incorporating Brazilian Architectural elements in urban planning and public spaces, promoting a sense of cultural pride and enhancing the overall urban experience.

In addition to the socio-cultural aspects, scholars have explored the sustainable features of Brazilian Architecture and their relevance in contemporary design. Olufemi (2021) analyzed the bioclimatic principles inherent in the design of these historic buildings, such as natural ventilation, shading, and thermal mass, emphasizing their potential for integration into modern sustainable architecture. Šekularac, Ivanović-Šekularac, & Petrovski (2020) further investigated the use of locally sourced and sustainable building materials in Brazilian Architecture, promoting a more environmentally conscious approach to construction and preservation efforts.

### 3. Materials and Methods

The primary objective of this research is to analyze and identify effective strategies that have been employed in successfully revitalizing historic buildings in Nigeria. Historic buildings are embedded in specific cultural, environmental, and temporal contexts, which makes it challenging to generalize findings from one building to another without a thorough understanding of the factors at play. By focusing on a small number of in-depth case studies, this research can explore the intricacies of each project, providing insights that are grounded and rich in detail. To achieve this, a case study approach is employed, focusing on a selection of historic buildings in regions with a tropical climate. Case studies are particularly appropriate for this research, as they allow for an in-depth examination of specific examples where preservation and modernization have been integrated. This method also enables the research to capture contextual nuances, making it suitable for addressing complex real-world phenomena like architectural preservation in diverse cultural and environmental settings and building types. The diversity in building types enhances the study's ability to identify strategies that are effective across different kinds of historic structures, each with its own architectural and functional characteristics. Hence, the case study method is justified for this research due to the complex, multifaceted nature of architectural preservation.

The following building types were considered for this research to capture a wide range of preservation and modernization challenges:

- Colonial-era buildings: These structures are historically significant, reflecting Nigeria's colonial past and the architectural styles introduced during that period. The preservation of colonial buildings often involves balancing historical authenticity with contemporary functionality.
- Traditional Yoruba buildings: Traditional Yoruba buildings hold significant cultural and architectural value, making them an essential focus for this study on balancing preservation and modernization. The Yoruba people, one of the largest ethnic groups in Nigeria, have a long history of constructing distinct architectural forms that reflect their societal structures, beliefs, and environmental adaptations. These buildings, often found in the southwestern part of Nigeria, are typically characterized by their use of local materials, communal layouts, and symbolic design elements.

A final criterion for this study is the balance between preservation and modernization efforts within each project. The selected buildings demonstrated cases where preservation and modernization strategies have been employed in tandem, rather than projects focused solely on restoration or new construction. This balance is central to the research objective of identifying strategies that honor the historical integrity of a building while adapting it for contemporary use. Following these criteria, this research identifies and examines the Deji of Akure's Palace, Owo Palace in Owo Town, and Jaekel House, Lagos.

#### 3.1. Data Collection Methods

In the pursuit of understanding the strategies required for a successful balance and preservation, this study employs two key data collection methods, which are document analysis and photographic documentation. These data collection methods are designed to gather comprehensive and contextually rich information about the preservation and modernization strategies applied to historic buildings. Each method contributes to understanding the processes and outcomes of revitalization efforts, providing a well-grounded view of the challenges and strategies involved in balancing preservation with modernization.

#### 3.2. Data Analysis Techniques

The data analysis technique for this research is a combination of thematic analysis<sup>1</sup> and cross-case synthesis<sup>2</sup> which ensures that the data is analyzed in a detailed and holistic way.

### 4. Results

#### 4.1. Case Study 1: Deji of Akure's Palace

The Deji of Akure's Palace, located in the heart of Akure, Ondo State, is a significant historical and cultural monument for the Yoruba people. Serving as the official residence of the Deji (the traditional ruler of Akure), the palace has been the center of governance and culture for over 900 years. Architecturally, the palace reflects traditional Yoruba designs, featuring expansive courtyards, detailed frescoes, and wall decorations (Figure 1), ornately carved wooden and mud pillars (Figure 2) that symbolize the power and heritage of the ruling dynasty. Over time, the palace has served as a seat of traditional authority and a hub for community gatherings, maintaining its relevance in the modern era.

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<sup>1</sup> Thematic analysis is a qualitative approach used to identify, analyze, and report patterns (themes) within the data. This method is well-suited to this research, as it allows for a deep exploration of the diverse perspectives and experiences involved in the preservation and modernization of historic buildings. Through thematic analysis, the research will examine primarily the documentary data to uncover recurring themes related to the strategies, challenges, and outcomes of revitalization efforts

<sup>2</sup> Cross-case synthesis is a method used in multiple case study research to compare and contrast findings across different cases. This technique is essential for this study, as it involves analyzing multiple historic buildings to identify commonalities and differences in how preservation and modernization strategies are applied. By employing cross-case synthesis, the research can explore how similar challenges are addressed in different contexts, and which strategies are most effective across various case studies.



Figure 1. Wall decorations in the palace.



Figure 2. Ornate mud pillars.

#### 4.1.2 Preservation Challenges

Preserving the Deji of Akure's Palace has presented significant challenges, many of which are common to historic buildings in tropical regions:

1. **Environmental Deterioration:** The tropical climate of Akure, with its heavy rainfall and high humidity, has accelerated the decay of the palace's traditional materials, particularly wood and mud. Termite infestations and mold growth have also posed significant threats to the structural integrity of the building.
2. **Aging Infrastructure:** Much of the palace's original structure, including its roofs, wooden pillars, and walls, has weakened over the centuries due to limited maintenance and exposure to harsh weather conditions. The lack of modern infrastructure has further complicated preservation efforts.
3. **Urbanization and Encroachment:** The rapid urbanization of Akure has led to increased pressure on the palace grounds, with modern developments encroaching on its boundaries. This has resulted in the alteration of the palace's original landscape and reduced its historical footprint.
4. **Conflict between Tradition and Modernity:** As the palace continues to serve as a living residence for the Deji and a functioning governmental space, there is an ongoing tension between maintaining its historical authenticity and adapting the building to meet contemporary needs. Balancing these competing demands is a major challenge in its preservation.

#### 4.1.3. Preservation Efforts

Preservation efforts were conducted in collaboration with the Deji and other traditional stakeholders to ensure that any modernization respected the palace's cultural significance. This helped maintain the palace's role as a functioning traditional institution.

#### 4.1.4. Outcomes

The preservation and modernization of the Deji of Akure's Palace have led to several important outcomes, both in terms of architectural preservation and cultural continuity.

1. **Enhanced Longevity:** The structural reinforcements and modernization efforts have ensured that the palace remains a functional and safe space for the Deji and the local community. By addressing the critical maintenance issues, the palace's lifespan has been extended, allowing future generations to engage with its history.
2. **Cultural Continuity:** Despite the introduction of modern amenities, the palace continues to serve as a vital cultural and political center for the people of Akure. The careful balance between modernization and preservation has allowed the palace to maintain its traditional functions without compromising its historical significance.
3. **Sustainable Preservation Model:** The project demonstrated that historic buildings in tropical climates can be successfully preserved using a combination of traditional methods and modern technologies. This approach provides a sustainable model for preserving other heritage buildings in Nigeria.
4. **Community Involvement and Ownership:** The involvement of the local community and traditional stakeholders in the preservation process has fostered a sense of ownership and pride in the palace. This has contributed to a greater awareness of the importance of cultural heritage and the need for its preservation.

#### 4.2 Case Study 2: Owo Palace In Owo Town

Owo Palace, located in Owo, Ondo State, Nigeria, is one of the most significant traditional structures in southwestern Nigeria. Built over 600 years ago, it serves as the residence of the Olowo of Owo, the town's traditional ruler. The palace, which spans several hectares, is a masterpiece of Yoruba architecture and craftsmanship, reflecting the rich cultural and political history of the Owo Kingdom. The complex includes multiple courtyards (Figure 3), embodying the cultural and societal structures of the Yoruba people. The architecture of Owo Palace is characterized by intricately carved wooden pillars, decorative frescoes, and expansive halls that were designed to accommodate royal functions and communal gatherings. Over the centuries, the palace has remained a central hub of cultural identity for the Owo people, with its continued use preserving a deep connection to the past. Its preservation efforts are typically a reflection of the Deji's palace above.



**Figure 3.** The Olowo of Owo Palace captured one of the multiple courtyards.

#### **4.2.1 Outcomes.**

1. **Preservation of Cultural Identity:** By maintaining the architectural integrity of the palace's key ceremonial spaces, Owo Palace continues to serve as a living monument of Yoruba heritage. The blend of old and new has allowed the palace to remain relevant to traditional practices and modern-day governance.
2. **Improved Functionality:** The integration of modern utilities and structural reinforcements has enhanced the usability of the palace as a functioning royal residence, without compromising its historical significance.
3. **Sustainable Preservation Model:** The project demonstrated the importance of using a combination of traditional and modern techniques in historic preservation. This approach not only extends the life of the building but also ensures that it remains functional in a contemporary context.
4. **Community Engagement and Awareness:** The preservation efforts have heightened awareness within the local community of the importance of conserving heritage sites. Involving local artisans and stakeholders in the preservation process has fostered a sense of ownership and pride in the palace's continued existence.

These outcomes emphasize the importance of adaptability in preservation projects, particularly in tropical climates where environmental conditions can accelerate the deterioration of traditional materials. It also highlights the need for long-term maintenance plans and the benefits of involving local communities in the preservation process to ensure cultural continuity and sustainability.

#### **4.3 Case study 3: Jaekel house, Lagos (railway museum)**

Jaekel House (Figure 4), situated in the heart of Lagos, Nigeria, stands as a testament to the country's colonial railway history. Built in 1898, this Victorian-style building originally served as the residence of the Chief Mechanical Engineer of the Nigerian Railway Corporation. Named after Francis Jaekel, one of the most prominent Engineers who lived there. The house is a prime example of colonial architecture adapted to the tropical climate of West Africa.

The two-story structure, with its spacious verandahs, high ceilings, and large windows, was designed to maximize ventilation and minimize heat, which are crucial features for European residents in Lagos's humid climate. The house's architectural elements, including its wrought-iron balustrades and intricate woodwork, showcase the fusion of Victorian aesthetics with practical tropical design principles. For decades, Jaekel House served not only as a residence but also as a symbol of the railway's importance to Nigeria's economic development during the colonial era. The Nigerian Railway Corporation, established in 1912, played a pivotal role in the country's modernization, facilitating trade and connecting diverse regions of the nation.



**Figure 4.** The Jaekel House, Lagos.

#### **4.3.1 Preservation Challenges**

The preservation of Jaekel House revolved around numerous challenges, reflective of the broader issues confronting colonial buildings in Nigeria:

1. **Structural Deterioration:** Years of neglect following Nigeria's independence led to significant structural decay. The tropical climate, with its high humidity and heavy rainfall, accelerated the deterioration of wooden elements and weakened the building's foundation.
2. **Loss of Original Features:** Many original architectural features had been removed, altered, or damaged over time, compromising the house's historical integrity. Before its restoration, the building was abandoned for decades, leading to significant wear and tear.
3. **Changing Urban Landscape:** The rapid urbanization of Lagos threatened the house's context, with modern developments encroaching on the historical railway compound.
4. **Funding Constraints:** The Jaekel House required significant financial investment for restoration and maintenance. With limited funding available, the challenge was to secure adequate resources while ensuring that the preservation process adhered to conservation standards.
5. **Lack of Specialized Expertise:** The scarcity of professionals with experience in restoring colonial buildings in tropical climates complicated the preservation efforts.
6. **Balancing Authenticity and Functionality:** There was a need to preserve the house's historical character while adapting it for use as a museum, which required modern amenities and accessibility features.

#### **4.3.2. Preservation Efforts**

The strategy used in the modernization of Jaekel House was adaptive reuse, which involved preserving the building's historical integrity while adapting it to serve as a cultural site and a listed building. The transformation of Jaekel House necessitated careful modernization strategies as follows:

1. **Structural Reinforcement:** Modern engineering techniques were employed to stabilize the building's foundation and reinforce its structure, ensuring its longevity without altering its external appearance. The wooden sections of the house, including floors, railings, and beams, were either restored or replaced with new materials that closely resembled the originals. These maintained the visual and structural integrity of the building.
2. **Climate Control:** A subtle air conditioning system was installed to protect artifacts and enhance visitor comfort, carefully integrated to minimize visual impact on the historical interiors.
3. **Lighting Upgrades:** Energy-efficient lighting was introduced to illuminate exhibitions and enhance the building's features, designed to mimic the quality of original lighting where possible.
4. **Digital Integration:** Interactive displays and digital archives were incorporated to enhance the educational experience, allowing visitors to engage with railway history in a modern context.
5. **Accessibility Improvements:** Ramps and an elevator were discreetly added to make the museum accessible to all visitors, carefully designed to blend with the historical aesthetic.
6. **Zoning Approach:** Different areas of the house were designated for varying levels of restoration and modernization. Public spaces showcased more authentic restoration, while behind-the-scenes areas accommodated necessary modern infrastructure.
7. **Adaptive Reuse:** The building itself is to serve as a museum. This was planned to utilize the house's original layout, adapting rooms for exhibition purposes in a way that respected their original functions.

#### **4.3.3. Outcomes**

The restoration and adaptive reuse of Jaekel House as a museum yielded significant outcomes:

1. **Preservation of a Cultural Landmark:** Jaekel House stands today as an important historical and cultural landmark, preserving Lagos' colonial past and the history of Nigeria's railway system. The successful conservation has revitalized a key piece of the country's architectural heritage.
2. **Educational and Cultural Impact:** As a museum, Jaekel House now serves as a center for education and tourism. It provides valuable insights into Nigeria's transportation history and colonial legacy, attracting visitors, students, and researchers interested in the country's heritage.
3. **Sustainable Preservation Model:** The use of adaptive reuse in Jaekel House provides a sustainable model for the preservation of other colonial buildings in Nigeria. The project demonstrates that historic structures can be successfully repurposed for modern uses without sacrificing their historic significance.
4. **Importance of Stakeholder Collaboration:** The successful restoration of Jaekel House was made possible through the collaboration of multiple stakeholders, including the Nigerian Railway Corporation, preservation experts, and funding bodies. This highlights the importance of collective efforts in preserving historic buildings.
5. **Balancing Modern Functionality with Historic Preservation:** One of the key lessons from this project is the importance of balancing modern functionality with the need to preserve a building's historic character. The careful integration of modern amenities into Jaekel House ensured its continued use as a public space while maintaining the historic value.

#### **4.4. Emerging Themes**

The analysis of the case studies of Owo Palace, Deji of Akure's Palace, and Jaekel House reveals several critical emerging themes that are crucial in balancing the preservation and modernization of historic buildings. These themes highlight the complex interplay between various factors that influence the success of such projects and offer valuable lessons for future preservation and modernization efforts. The themes are highlighted in the following:

##### **4.4.1 Role of Stakeholder Engagement**

The involvement of various stakeholders ranging from local communities, government bodies, preservationists, and architects to private investors and cultural experts was essential in ensuring that the cultural and historical significance of the buildings was respected while implementing modern interventions. The thematic analysis of stakeholder engagement in the three case studies reveals several recurring themes that highlight the importance of collaborative efforts in such projects:

1. In all three case studies, stakeholder engagement was instrumental in incorporating traditional and cultural knowledge into the preservation process:
2. **Deji of Akure's Palace:** Similarly, the Deji of Akure and palace elders provided critical insights into the historical importance of the palace and how modernization could be carried out without undermining its role as a royal and cultural site.
3. **Owo Palace:** The Olowo of Owo and chiefs were actively engaged to ensure that the palace's historical and cultural functions were respected. Their input ensured that modernization did not interfere with the cultural and ceremonial significance of the space.
4. **Jaekel House:** Local cultural groups and heritage experts were involved to ensure that colonial architectural elements were preserved while integrating modern functionalities.

##### **4.4.2. Community Involvement and Ownership**

Community engagement emerged as a central theme, ensuring that the local population felt a sense of ownership over the preservation and modernization processes:

1. **Deji of Akure's Palace:** Local craftsmen were similarly engaged, ensuring that modernization efforts adhered to traditional methods and materials. Community engagement ensured that the project was locally relevant and supported.
2. **Owo Palace:** The involvement of local artisans and craftsmen in the restoration process helped retain traditional building techniques while empowering the community. This engagement fostered a sense of pride and responsibility among community members, who were actively involved in preserving their heritage.
3. **Jaekel House:** Public consultations and workshops were conducted to gather input from the local community, ensuring that the modernization efforts aligned with local expectations and values.
4. In all cases, community engagement was vital in ensuring that preservation efforts were locally relevant and embraced by the people living around these historic sites.

##### **4.4.3. Collaborative Decision-Making**

Collaboration between multiple stakeholders, including government authorities, heritage bodies, and local communities, was key to the success of the preservation and modernization strategies. These include the following:

1. **Deji of Akure's Palace:** The state government, heritage preservation bodies, and the royal family collaborated closely to ensure that both modern functionality and traditional aesthetics were maintained.
2. **Owo Palace:** Decisions were made collectively by involving the Olowo, heritage authorities, and architectural experts. This collaboration helped balance the need for modernization with the imperative of preserving the palace's historic and cultural value.
3. **Jaekel House:** The Nigerian Railway Corporation worked with heritage organizations and architectural experts to preserve the colonial structure while incorporating other nuances of a modern museum functionality.

4. Collaborative decision-making ensured that multiple perspectives were considered, balancing technical, cultural, and functional aspects of preservation and modernization.
5. Owo Palace: The National Commission for Museums and Monuments provided regulatory guidance, ensuring compliance with national heritage protection laws.
6. Jaekel House: The Lagos State government and heritage preservation authorities ensured that colonial laws governing historic sites were adhered to, while also supporting the modernization process.

#### **4. Discussions**

This study has presented an in-depth analysis of the three selected case studies— Deji of Akure’s Palace, Owo Palace, and Jaekel House in Lagos, each offering unique insights into the strategies employed for balancing preservation and modernization in historic buildings. The findings highlight key themes that are instrumental in understanding how historic structures can be revitalized while maintaining their cultural, historical, and architectural significance.

Stakeholder engagement emerged as a critical factor in the success of these projects. The involvement of local communities, heritage experts, and government bodies ensured that preservation efforts were aligned with cultural values and modern needs. This collaborative approach was particularly evident in the restoration of Owo Palace, where traditional rulers and local stakeholders influenced decisions on the palace restoration without compromising its ceremonial significance.

Secondly, the role of regulatory frameworks was a recurring challenge and enabler in the case studies. While regulations helped protect the historical integrity of the buildings, gaps in enforcement and insufficient guidelines for integrating modern technologies presented obstacles. The case of the Deji of Akure’s Palace highlighted the need for more flexible and comprehensive regulations that support sustainable modernization without detracting from heritage preservation. Contextual sensitivity was noticeable across all case studies. The successful modernization efforts in these projects were deeply rooted in an understanding of the cultural, historical, and environmental context of the buildings. In the case of Jaekel House, for example, the use of traditional architectural elements alongside modern features demonstrated a nuanced approach to balancing old and new. Similarly, the modernization strategies for Owo Palace respected the building's cultural and architectural heritage by using locally sourced materials and traditional craftsmanship.

The integration of sustainable practices also emerged as a significant factor in the preservation and modernization of historic buildings. All three case studies incorporated energy-efficient systems, environmentally friendly materials, and climate-resilient techniques, ensuring that the buildings could meet modern needs while minimizing their environmental impact. Jaekel House, in particular, stands out for its adoption of sustainable technologies that were seamlessly integrated without compromising its colonial aesthetic.

Overall, the findings from these case studies provide valuable lessons for future preservation and modernization efforts. By addressing these factors, historic buildings can be revitalized in a way that respects their past while ensuring their relevance and functionality in the present and future.

#### **5. Conclusions**

The preservation and modernization of historic buildings are critical to maintaining cultural heritage while meeting the functional needs of contemporary society. In this study, the case of revitalizing spaces within Nigeria’s tropical climate was explored, focusing on balancing preservation with the demands of modernization. The analysis of case studies such as the Deji’s Palace, Olowo of Owo Palace, and Jaekel House reveals the importance of applying strategies that do not compromise the historical and architectural significance of these structures while ensuring that they remain functional and relevant for current use.

In each case, the research highlights a comprehensive approach to preservation that includes stakeholder engagement, sensitivity to historical context, and compliance with regulatory frameworks. The strategies adopted ranged from minimal intervention, as seen in the modernization efforts at Olowo Palace Owo, to a more adaptive reuse methods employed at Jaekel House, where modern utilities were introduced without altering the essential historical character of the structure. These approaches demonstrate that with the right balance, it is possible to integrate modern amenities into historic buildings without eroding their cultural value.

The findings also underscore the role of sustainability in these projects. The integration of passive cooling techniques, use of locally sourced materials, and design adaptations that enhance natural lighting and ventilation are evident in all three case studies. Such practices ensure that these revitalized spaces not only serve cultural and functional purposes but also align with global sustainability trends. In tropical climates like Nigeria’s, the importance of sustainable design cannot be overstated, as these strategies contribute significantly to reducing energy consumption while maintaining the thermal comfort of occupants.

Moreover, the role of stakeholder engagement proved vital to the success of the projects. The involvement of local communities, conservation experts, and regulatory bodies ensured that preservation efforts were collaborative and inclusive, respecting the historical significance of the buildings while incorporating the needs and preferences of modern users. This engagement fosters a sense of ownership and pride within the community, ensuring the longevity and continued relevance of these heritage sites.

Given these, revitalizing historic buildings in Nigeria's tropical climate requires a delicate balance between preserving historical integrity and introducing modern functionalities. The case studies analyzed, offer valuable insights into how such a balance can be achieved through adaptive reuse, sustainable design, and active stakeholder involvement. These findings not only contribute to heritage conservation but also provide practical solutions for future projects seeking to integrate tradition with modernization in tropical environments. The success of the strategies demonstrates that historic

buildings can evolve to meet the demands of contemporary life while preserving their cultural and architecture significance for future generations.

### Conflict of Interests

The Author declares that there is no conflict of interest.

### References

- Affah, N., & Kurniawan, K. R. (2022). Intangible aspect of revitalization in vernacular heritage architecture: A case study of Wae Rebo NTT Village.
- Adeyemo, A. (2023). Understanding the multiple architectural modernities in colonial and post-independence Nigeria.
- Ariffin, A. B., Mohd Zahari, M. S., & Hanafiah, M. H. (2020). Adaptive reuse of historic buildings: Connecting the links between tourist appreciation and visitation.
- Aziz Amen, M. (2022). The effects of buildings' physical characteristics on urban network centrality. *Ain Shams Engineering Journal*, 13(6), 101765. <https://doi.org/10.1016/j.asej.2022.101765>
- Amen, M. A., & Kuzovic, D. (2018). The effect of the binary space and social interaction in creating an actual context of understanding the traditional urban space. *Journal of Contemporary Urban Affairs*, 2(2), 71–77. <https://doi.org/10.25034/ijcua.2018.3672>
- Amen, M. A., & Nia, H. A. (2021). The effect of cognitive semiotics on the interpretation of urban space configuration.
- Babazadeh-Asbagh, N. (2011). The conservation and revitalisation of Mirza Mehdi Farashbashi's house in Tabriz [Master's thesis, Art University of Isfahan, Isfahan, Iran]. <https://doi.org/10.13140/RG.2.2.12404.73609>
- Bahishti, A. A. (2013). A short note on scientific research methodologies.
- Brombaugh, A. (2017). The greenest building: The environmental benefits of repurposing historic buildings. *Environmental Design and Construction*, 20(4), 42–46.
- Bullen, P. A., & Love, P. E. (2011). Adaptive reuse of heritage buildings. *Structural Survey*, 29(5), 411–421.
- Cuervo-Cazurra, A., Mudambi, R., & Pedersen, T. (2017). Research methodology in global strategy research.
- Getty Conservation Institute. (2012). Historic urban environment conservation challenges and priorities for action.
- Kim, D. H., & Felkner, J. (2018). A sustainable approach to the adaptive reuse of historic brick buildings: Analysis of energy efficiency strategies for historic facade retrofits.
- López, F. J., Lerones, P. M., & Llamas, J. (2018). A review of heritage building information modeling (H-BIM).
- Liu, Y. (2023). Application and development of traditional elements in rural revitalization design under new media perspective.
- Mustafa, F. A. (2023). Adaptive reuse of historical buildings using ARP model: The case of Qishla Castle in Koya City.
- Ni, Z., Liu, Y., & Karlsson, M. (2022). Enabling preventive conservation of historic buildings through cloud-based digital twins: A case study in the City Theatre, Norrköping.
- Nwaolikpe, O. N. (2013). Culture and Nigerian identity in the print media.
- Olanrewaju, O. I., Babarinde, S. A., & Salihu, C. (2022). Current state of building information modeling in the Nigerian construction industry.
- Olufemi, O. (2021). Urban encroachment and its impact on historic sites: A study of Owo Palace in Ondo State, Nigeria. *African Journal of Cultural Studies*, 13(4), 231–248.
- Ramires, K. S. (2024). Revitalizing colonial architecture in Havana, Cuba: Balancing preservation and modernization.
- Semes, S. W. (2009). *The future of the past: A conservation ethic for architecture, urbanism, and historic preservation*. W. W. Norton & Company.
- Šekularac, N., Ivanović-Šekularac, J., & Petrovski, A. (2020). Restoration of a historic building in order to improve energy efficiency and energy saving—Case study: The dining room within the Žiča Monastery property.
- Taher Tolou Del, M. S., Saleh Sedghpour, B., & Kamali Tabrizi, S. (2022). The value revitalization model of Qajar religious schools in Tehran.
- Tweed, C., & Sutherland, M. (2007). Built cultural heritage and sustainable urban development. *Landscape and Urban Planning*, 83(1), 62–69.
- Turnšek, B. A.-J., Stanojević, A., & Jevremović, L. (2020). Developing a model for sustainable conversion of blockhouse bunkers in Serbia.
- UNESCO. (2011). Recommendation on the historic urban landscape. Retrieved from <https://whc.unesco.org/en/hul/>
- Zhang, J., & Li, G. (2022). Research on the optimization of landscape design talent training mode under the background of rural revitalization strategy.