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Cultural Identity and Contemporary Architecture: Reinterpreting Indigenous Design in Modern Nigerian Buildings, a study of Abeokuta, Ogun State, Nigeria

Oguntimehin Abiodun S [1]

[1] Department of Architectural Technology, Federal Polytechnic, Ilaro Ogun State
Email: abiodun.oguntimehin@federalpolyilaro.edu.ng

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ABSTRACT

Contemporary architecture in Nigeria is now being dominated by the adoption of foreign architectural styles that do not respond appropriately to regional climatic and cultural conditions of Nigeria which is now creating an alarming decline in the uniqueness of indigenous architecture. This study explores ways of infusing Yoruba traditional design ideas into modern architectural practices in Abeokuta, Ogun State. Using a descriptive survey design with a sample of 250 architects, builders and residents, and supported by case studies, the research discovered that 62.0% of the existing public buildings lack indigenous components and 92.0% of the respondents agreed that the Courtyard system is fit for ventilation. Decorative appropriation dominates integration attempts by (67.2%), yet only 7.2% achieve structural or spatial integration. Primary barriers include client preference for modern aesthetics, lack of skilled artisans, and absence of supportive building codes. The study recommends curriculum reform in architectural education, development of hybrid material standards, and policy incentives for culturally responsive design. This research contributes empirical evidence for moving beyond superficial aesthetic appropriation toward structural integration of indigenous knowledge in contemporary Nigerian architecture.

1. Introduction

1.1 Background to the Study

Buildings, by their very nature, reflect the culture, history, and environment of a people in a very direct and physical way. In Nigeria for instance, the country's local architectural styles have greatly been influenced by the particular climate, availability of materials, and social organization of the various peoples over time (Nwafior et al. 2025; Ali et al, 2025). Traditional Nigerian architecture, from the spacious, open family houses of the Yoruba (agbo ile) to the solid, earth-walled enclosures of the Hausa, not only represent an expression of culture on one hand but also a harmonious and efficient use of environmental conditions (Agboola & Zango, 2014).

However, the colonial encounter and post-independence modernism has gradually sidelined the indigenous design principles in favour of the imported styles. Today, contemporary Nigerian architecture often bears the marks of the generic global forms: glass curtain walls, concrete frames, and air-conditioned interiors that are quite inefficient in tropical climates and also disconnect the inhabitants from the cultural traditions (Nwafior et al. 2025; Onyia, 2023). The outcome is built environments that signify economic modernity but they consume an enormous amount of energy for cooling and at the same time they overlook communal spatial practices which were the basis of the indigenous forms (Babalola et al. 2024; Popogbe et al. 2023).

The capital of Ogun State and the historical centre of the Egba Yoruba civilisation, Abeokuta, stands out as a city with its own character. This city is endowed with lots of heritage that go beyond the Olumo Rock settlements and the Alake's Palace known for its complex courtyard arrangement and exquisite woodcarving (Aderemi et al. 2020). Yet its contemporary built environment increasingly reflects generic modern construction, creating tension between heritage and modernity that encapsulates broader Nigerian architectural challenges (Nwafior et al., 2025).

Some recent work has been advocating for Critical Regionalism that, For one thing, defies globalisation and, on the other, makes use of modern technologies (Ali et al,, 2025). The theory of vernacular architecture stresses that traditional forms are the result of a common way of adapting to the climate and the social organisation (Nwafior et al. 2025). Sustainable architecture is a hot topic and in the discussions on it the recognition of the indigenous passive cooling and the use of local materials as elements suitable for climate-responsive design has been highlighted (Babalola et al. 2024; Onyia, 2023). Still, even with this interest, large gaps still exist in understanding, for example, the extent to which traditional principles can be integrated so that is far from mere superficial aesthetic appropriation (Ali et al,, 2025; Watson, 2016).

1.2 Statement of the Problem

Today, a lot of the architecture in Nigeria is strongly influenced by foreign design trends which do not really consider the cultural, climatic and social situations of the country. A consequence of this is that the native architectural identity is slowly disappearing. Simply put, buildings intended for moderate climates are brought to the tropics where a lot of energy has to be spent on mechanical systems to make the occupants comfortable while old natural architectures achieved the same result passively without the help of any mechanical systems (Babalola et al. 2024; Onyia, 2023). The social areas which were used for community interaction have now been taken over by private interiors This way, creating a gap between the people and their cultural practices (Popogbe et al. 2023; Nwafior et al. 2025).

Besides in reality, some architects try to use traditional features, the result is often merely decoration on modern structures, with traditional roof shapes made of foreign materials, or cultural symbols attached to ordinary buildings (Ali et al,, 2025; Watson, 2016). Such a method will not tap into the underlying concepts of spatial arrangement, climatic adaptation, and use of materials that gave native architecture its unity (Nwafior et al. 2025).

The question on how the design principles of the past can be physically and visually incorporated into today's practices is rarely tackled. This is seen in the way architecture is taught, the way architects work, the types of materials used, and the policies set in place (Obi et al. 2022; Nwafior et al. 2025). Hence, Abeokuta, known for its Yoruba cultural legacy and its modern development, presents a perfect field for research on this issue.

1.3 Aim and Objectives

The aim is to examine indigenous Yoruba architectural elements, analyse contemporary integration attempts, and develop strategies for meaningful cultural identity integration in Abeokuta.

Objectives:

1. To examine key elements of indigenous Yoruba architecture and their functional relevance.
2. To analyse contemporary buildings in Abeokuta that attempt to incorporate traditional design principles.
3. To develop strategies for integrating cultural identity into modern architectural design beyond superficial aesthetics.

1.4 Research Questions

1. What are the key elements of indigenous Yoruba architecture in Abeokuta and their functional relevance?
2. How have contemporary buildings in Abeokuta attempted to incorporate traditional design principles?
3. What strategies can effectively integrate cultural identity into modern architectural design?

1.5 Significance of the Study

This study is set to strengthen discourse on culturally responsive architecture by bridging tradition and modernity. It provides architects with frameworks for designing buildings that are contextually relevant and globally competitive. The research supports cultural heritage preservation through contemporary practice and contributes to sustainable architecture debates by demonstrating indigenous climatic strategies.

1.6 Scope and Definitions

The study focuses on indigenous Yoruba architecture and its reinterpretation in contemporary buildings in Abeokuta, Ogun State, examining residential, institutional, and commercial buildings constructed within the last two decades.

Key definitions:

- **Indigenous architecture:** This is an architecture developed within a cultural context through generations of accumulated knowledge, using local materials and climatic responsiveness.
- **Critical Regionalism:** An architectural theory resisting global homogenisation while engaging modern technologies and local traditions.
- **Courtyard system:** This is a spatial organisation with rooms arranged around a central open space serving ventilation, lighting, and social functions.

2. Literature Review

2.1 Conceptualising Informality and Tradition in African Architecture

Kamete (2018) emphasises that settlements operate under internal logic where spatial arrangements respond directly to environmental and economic realities. Finn and Cobbinah (2023) demonstrate that African informal communities have developed sophisticated coping mechanisms for environmental variability.

When these views are extended to architecture, they imply that indigenous building forms should not be seen as old-fashioned versions of modernity but rather as integrated systems of environmental and cultural knowledge (Nwafior et al. 2025). Jega & Muhy (2023) revealed that vernacular architecture is a result of the community's shared adaptation to the environment, materials and social organization. It reflects the "cultural logic of space". This opens up a new debate on the modernist dictum that form follows function. The new thesis says, on the contrary, form follows culture, with climate and materials halfway mediating (Nwafior et al. 2025).

2.2 Critical Regionalism and the Tradition-Modernity Interface

Mike et al. (2018) give a quite leading contemporary setup for the combination of local cultural identity and modern architectural design. They demonstrate how regional dialects can harmoniously fuse with the latest construction systems. It is a criticism of global modernism's homogenizing nature that unreservedly accepts modernity. What it does is point out the importance of local climate, relief, and cultures in the use of modern technologies (Ali et al,, 2025). But, in Nigeria, this means dealing with very diverse colonial and post-colonial heritage, which goes beyond the simple oppositions of wholly rejecting or uncritically accepting all foreign influence (Nwafior et al. 2025; Watson, 2016).

Nwafior et al. (2025) considered this in Nigerian scenarios and suggest that architectural designs should reflect the reality of the people while being part of the global conversation. In Watson (2016) it was pointed out that planning theories ignore indigenous knowledge. Then again, Satterthwaite (2017) shows that informal settlements are very resilient socially and geographically with their gradual changes. These studies enable us to view how native architectural knowledge can be a source of modern design inspiration without relying on a retrospective representation.

2.3 Indigenous Yoruba Architecture: Core Elements

Yoruba architecture is a clear reflection of sophisticated spatial organisation, climate and cultural expression and other feats of architectural mastery. The courtyard compound (agbo ile) literally means the sequence of rooms surrounding central open spaces and creating hierarchical organisation reflecting family structure, social status, and gender relations (Aderemi et al. 2020; Agboola & Zango, 2014). Courtyards perform different functions: they act as ventilation shafts drawing cool air through rooms; they are light wells that illuminate the interior spaces; they are social spaces used for domestic and ceremonial activities; and symbolically, they are centres that express family unity (Nwafior et al. 2025).

Thick earthen walls act as thermal mass, soaking up heat in the day and releasing it slowly at night to keep the room temperature stable (Babalola et al. 2024; Onyia, 2023). Timber setups hold the construction together, while carved posts and beams are not only supportive but also add to the beauty of the buildings (Aderemi et al. 2020). The decorative arts are a part of the structure itself: for example, carved door panels are not only protective but also act as a form of marking the occasion, while wall

paintings depict historical and mythical stories, this way turning the buildings into the stores of cultural memory (Aderemi et al. 2020; Equere et al. 202).

Climatic responsiveness represents perhaps the most significant functional achievement. The courtyard stack effect draws cool air from shaded ground level while warm air escapes at roof level (Nwafior et al., 2025; Agboola & Zango, 2014). Thick walls provide thermal lag of up to fifteen hours, maintaining comfortable interior temperatures (Giuffrida et al. 2021; Onyia, 2023). Small windows allow for reducing what the sun can directly do to the room, but also allow air to flow through the room, and overhanging eaves are as important as the other two in the protection of walls from sun exposure (Nwafior et al. 2025).

2.4 Contemporary Nigerian Architecture: Critiques and Integration Attempts

Most of today's Nigerian architecture follows international modernism trends closely. For example, reinforced concrete frames and glass curtain walls as well as interiors that require air conditioning have become the norm (Nwafior et al. 2025). This leads to various issues for climate: the buildings rely on electricity that is often not available for cooling, natural ventilation is hardly used, and most of the materials with high embodied energy are imported (Babalola et al. 2024; Onyia, 2023). At the same time socially the use of imported typologies ignores the communal spatial traditions, changing the courtyard gathering into compartmentalized privacy (Popogbe et al. 2023; Nwafior et al. 2025).

Integration attempts remain rare and typically superficial. Decorative woodcarving is applied to concrete structures; traditional roof forms are replicated in aluminium; cultural symbols are grafted onto conventional buildings (Ali et al, 2025; Watson, 2016). This nostalgic pastiche fails to achieve either authentic cultural expression or effective climatic performance.

There are some great exceptions to the rule. For example, Demas Nwoko's Obafemi Awolowo University Natural History Museum uses traditional spatial organisation and local materials, but at the same time, it is a modern institutional building type (Nwafior et al. 2025). In Kano, modern housing has taken the Hausa courtyard typology and made it more suitable for today's needs; for instance, semi-private courtyards are used for privacy as well as passive cooling (Agboola & Zango, 2014). The Makoko Floating School by Kunle Adeyemi, though limited in its lifespan due to practical difficulties, was a fusion of the indigenous water-based living traditions with modern engineering (Okeke et al. 2019). These examples indicate that integration can be very thorough and meaningful but it needs to be structurally and spatially principled rather than being a mere visual.

2.5 Barriers to Integration

Several factors have hindered the integration process. Education-related issues lead the way: most architectural courses focus on Western theories while local knowledge takes a back seat, architects end up skilled in the technical aspects but losing touch with the local culture (Obi et al. 2022; Nwafior et al. 2025). Rules and regulations, mainly derived from British and American systems, do not even acknowledge the use of indigenous materials and methods (Akande et al. 2024; Ogunbayo et al. 2021). Client preferences strongly favour modern aesthetics, associating imported styles with progress and status (Equere et al., 2021; Nwafior et al., 2025). Material and technical constraints include scarcity of skilled artisans, lack of material standardisation, and construction techniques unsuited to contemporary speed and scale requirements (Nwafior et al., 2025; Aderemi et al., 2020).

2.6 Research Gap

Many existing literature works have provided theoretical frameworks and scattered case studies, empirical research on how specific traditional elements function in contemporary contexts remains limited. Most studies document traditional architecture as heritage or critique contemporary failures without systematically examining integration strategies (Nwafior et al., 2025; Ali et al,, 2025). There is particular lack of research on Abeokuta compared to more visible settlements, and limited documentation of actual integration attempts, barriers, and outcomes. This study addresses these gaps through empirical examination of stakeholder perceptions, building practices, and integration strategies in Abeokuta.

3. Methodology

3.1 Research Design and Area

The study adopts a descriptive survey design complemented by case study analysis of five selected buildings in Abeokuta, Ogun State, Nigeria.

3.2 Population and Sampling

The population comprises registered architects, master builders/artisans, and adult residents in Abeokuta. A stratified sample of 250 respondents was selected: 100 architects (40%), 75 builders (30%), and 75 residents (30%).

3.3 Instrument and Data Collection

A structured questionnaire with five sections (demographics, indigenous knowledge, integration practices, barriers, strategies) was validated by four experts and piloted with 25 respondents. The data were collected through face-to-face administration over six weeks with Yoruba/English bilingual assistants.

Five buildings were selected for case study: a contemporary residential villa with traditional references (private residences in the Ibara GRA (Government Reservation Area); a 1970s government college (Abeokuta Grammar School (established 1910); a central commercial plaza in Itoku Adire Maket; an active traditional compound (an ***Agbo-Ile*** in Isale Igbeyin Area); and a church combining modern and traditional elements (St. Peter's Cathedral (First Church in Nigeria, built 1844). Photographic documentation was obtained with owner consent.

3.4 Data Analysis

Quantitative data were analysed using descriptive statistics, specifically frequency distribution and simple percentage analysis, to summarise respondent responses. Qualitative data from open-ended responses and case studies underwent thematic analysis following Braun and Clarke (2006). Ethical standards included voluntary participation, informed consent, confidentiality, and respectful community engagement.

4. Results and Discussion

4.1 Respondent Profile

The sample comprised 100 architects (40%), 75 builders (30%), and 75 residents (30%). Males constituted 72.8%, reflecting construction industry gender imbalance. The dominant age group was 36-45 years (36.8%), indicating mid-career professionals with substantial experience. Among architects, 86% held postgraduate qualifications, and only 6% reported additional training in traditional crafts, confirming educational gaps identified in literature (Obi et al., 2022).

4.2 Knowledge and Functional Relevance of Indigenous Elements

Table 1: Familiarity and Functional Relevance of Indigenous Elements

Element	Familiar (%)	Functionally Relevant (%)
Courtyard system	88.0	92.0
Thick earthen walls	86.4	89.6
Decorative woodcarving	89.6	92.0
Veranda spaces	92.0	88.0
Compound layout	89.6	88.0

Interpretation: Respondents from this study demonstrated high familiarity with 86-92%, and strong recognition of functional relevance with 88-92% across all elements. This finding simply show that the erosion of indigenous architecture is not caused by lack of knowledge or recognition of value; rather, as subsequent sections demonstrate systemic barriers prevent translation of this recognition into practice. The high recognition among architects (96% for courtyard ventilation) contrasts with their limited integration practice, suggesting that professional knowledge is overridden by market, regulatory, and technical constraints.

4.3 Integration in Contemporary Buildings

Table 2: Extent of Indigenous Element Integration

Integration Level	Frequency	Percentage (%)
Complete (structural/spatial)	18	7.2
Partial (decorative/aesthetic)	72	28.8
Minimal (tokenistic)	98	39.2
None at all	62	24.8
Total	250	100

Interpretation: This response simply showed that meaningful integration is rare: only 7.2% of respondents observed complete integration engaging structural and spatial principles. The majority (68% combined) reported minimal or partial integration limited to decoration. This confirms the literature's critique that contemporary Nigerian architecture engages indigenous elements as nostalgic pastiche rather than structural logic as in the study of Ali et al,, 2025; Watson, 2016. The 24.8% reporting no integration whatsoever indicates that neglect remains widespread.

Table 3: Specific Elements Integrated (Multiple Responses)

Element	Frequency	Percentage (%)
Decorative woodcarving/motifs	168	67.2
Traditional roof forms (modern materials)	142	56.8
Courtyard (as atrium/light well)	88	35.2
Veranda/porch spaces	76	30.4
Earth-based materials	42	16.8
Compound layout	38	15.2
Thick walls for thermal mass	28	11.2

Interpretation: From the responses to this table, we deduced that decorative elements dominate integration (67.2%), while structurally significant elements are neglected: courtyards (35.2%), earth materials (16.8%), compound layouts (15.2%), and thick walls (11.2%). This discrepancy between what is functionally relevant (Table 1: 88-92%) and what is actually integrated (Table 3: 11-35%) represents the central finding of this study. It demonstrates that integration remains at the level of superficial aesthetic appropriation rather than engaging the spatial and material principles that gave indigenous architecture its climatic and social effectiveness.

4.4 Quality of Integration Attempts

Table 4: Quality Assessment of Integration

Quality Level	Frequency	Percentage (%)
Highly successful	22	8.8
Moderately successful	68	27.2
Limited success (mainly aesthetic)	118	47.2
Unsuccessful	42	16.8
Total	250	100

Interpretation: This table shows that only 8.8% of integration attempts are rated highly successful. The plurality (47.2%) achieved limited success mainly at the aesthetic level, while 16.8% were considered unsuccessful. This pattern supports Mike et al study of (2018) created distinction between Critical Regionalism and nostalgic pastiche, with most attempts falling into the latter category. The low success rate suggests that superficial approaches do not only fail to achieve functional goals but may actively undermine cultural authenticity by producing incoherent hybrids.

4.5 Barriers to Integration

Table 5: Major Barriers (Ranked by Mean Score)

Barrier	Mean Score	Rank
Client preference for modern aesthetics	4.32	1
Lack of skilled artisans	4.18	2
Absence of supportive building codes	3.96	3
Higher perceived cost	3.84	4
Lack of technical documentation	3.72	5
Architect's limited knowledge	3.68	6

Scale: 1 = Not a barrier, 5 = Major barrier

Interpretation: In the table's response, it's clear that client preference emerges as the most significant barrier (4.32), confirming market-driven nature of architectural practice as noted in Equere et al., 2021; Nwafior et al., 2025. Notably, architect knowledge (3.68) ranks below client preference, artisan scarcity (4.18), and regulatory gaps (3.96), suggesting that educational deficits, while significant, are not the primary obstacle. This finding, challenges assumptions that curriculum reform alone will transform practice; systemic market, technical, and regulatory barriers require concurrent attention.

Table 6: Cross-Tabulation of Top Barriers by Stakeholder Category

Barrier	Architects (%)	Builders (%)	Residents (%)
Client preference	92.0	69.3	64.0
Lack of artisans	68.0	96.0	56.0
Absence of codes	82.0	50.7	37.3

Interpretation: Different stakeholders experience different barriers. Architects encounter client resistance most acutely (92%), while builders uniquely emphasise artisan scarcity (96%), reflecting direct labour market experience. Architects are most concerned about codes (82%), as regulatory limitations affect professional liability. These divergences highlight the need for multi-dimensional strategies targeting specific stakeholder constraints (Satterthwaite, 2017; Finn & Cobbinah, 2023).

4.6 Strategies for Meaningful Integration

Table 7: Assessment of Integration Strategies (Ranked by Mean Score)

Strategy	Mean Score	Rank
Curriculum reform in architectural education	4.48	1
Development of hybrid material standards	4.36	2
Policy incentives for culturally responsive design	4.28	3
Community participation in design	4.18	4
Documentation/certification of materials	4.12	5
Pilot demonstration projects	4.08	6

Interpretation: Curriculum reform receives highest rating (4.48), aligning with Obi et al. (2022) on educational foundations. Hybrid material standards (4.36) address builders' technical barriers, while policy incentives (4.28) target architects' regulatory concerns. The consistency of high ratings (all above 4.0) indicates broad recognition that effective integration requires coordinated action across education, technology, and policy domains.

Table 8: Preferred Integration Approach by Architects

Approach	Frequency	Percentage (%)
Structural/spatial integration	62	62.0
Material integration	48	48.0
Process integration	42	42.0
Typological integration	38	38.0
Decorative integration	28	28.0

Multiple responses

Interpretation: Architects strongly prefer structural and spatial integration (62%) over decoration (28%), indicating professional readiness for deeper engagement if systemic barriers are addressed. This preference aligns with the study's argument for moving beyond superficial appropriation and supports the feasibility of curriculum and policy reforms that enable professional practice to match professional values (Nwafior et al., 2025; Watson, 2016).

4.7 Case Study Illustrations

Five buildings were analysed to illustrate integration patterns:

Case 1: Contemporary Residential Villa with Traditional References - Ibara Government Reservation Area

The Ibara GRA contains several contemporary residential villas built by affluent professionals who have attempted to incorporate traditional Yoruba elements into otherwise conventional modern construction. So, we selected and examined in detail, a villa, a two-storey detached house that was completed in 2018. A small internal courtyard was included, though measuring only 3 metres by 2 metres, it proved too compact to generate effective stack ventilation. The walls were constructed of 150mm sandcrete blocks with no thermal mass, and the carved columns were non-structural steel frames clad with timber veneer rather than load-bearing wooden posts.

The interior temperature measured during the site visit at 2:00 p.m. was 31.5C, while the temperature outside was 33.8C, which shows that there was very little thermal lag. The occupant shared that he was using air conditioners for about eight hours per day on average during the dry season, and the monthly electricity bills were over 45,000. The courtyard, which was a cultural reference, ended up being just a light well since its size was not sufficient for social gathering or for effective ventilation. Although the carved columns were unique to the eye, they were placed only as decorative features and not as part of the structure. This example is of surface-level aesthetic borrowing: traditional elements were simply stuck on a modernist building without taking seriously the spatial and material logic which made vernacular architecture both climatically and socially effective.

Case 2: Government College - Abeokuta Grammar School (Established 1910, with 1970s Expansion Blocks)

Abeokuta Grammar School was founded in 1910, and it represents one of Nigeria's oldest secondary school. These original colonial-era buildings, feature ground-floor arcades, stone rubble construction, and prominent eaves that demonstrate early climatic adaptation. However, the 1970s expansion blocks, which now house the majority of students, were examined for this study. These blocks consist of pure modernist concrete frame construction with large unshaded windows oriented westward, flat concrete slab roofs with minimal overhang, and no courtyard spaces or verandas.

During the field observation conducted at 11:30 a.m. in March, classroom interior temperatures reached 34.2°C with an exterior temperature of 35.5°C. Students were observed using hand fans and opening windows fully, yet cross-ventilation was limited by the corridor-block layout. The 1970s blocks represent complete neglect of indigenous principles: no thick earthen walls for thermal mass, no courtyard for ventilation and light, no veranda for shaded circulation, and no consideration of solar orientation. The building could be located in any tropical city worldwide, demonstrating the placelessness that Critical Regionalism critiques.

Case 3: Central Commercial Plaza - Itoku Adire Market

Itoku Market, which is well known as the centre of the traditional Adire textile industry in Abeokuta, was looked at as one of the types of commerce. Although the market still holds a lot of cultural importance and is the scene of many social happenings, the physical buildings have changed a lot. What used to be open-air stalls with thatched or corrugated metal roofing have gradually been changed to two-storey concrete shop blocks built in the 1990s and 2000s. These blocks have architecture typical of the global market: concrete frame construction, aluminium sliding windows, flat concrete roofs with very little overhang, and no courtyard or shaded pedestrian areas.

When the market was visited at 1 p.m. the narrow corridors between the blocks showed a temperature of 36.0C and there was very little air movement. Traders were seen using umbrellas for shade even inside the corridors and some of them have personal electric fans which are powered by small generators.

Case 4: Active Traditional Compound - Agbo-Ile in Isale Igbeyin Area

Located in the Isale Igbeyin area of Abeokuta, several traditional Yoruba compounds (also known as agbo ile) which are still functioning as multi-family residential settlements are found there. One such compound was investigated thoroughly as it people think is over eighty years old and still three families of the same lineage are living in it. The compound revolves around a central courtyard which is about 8m by 6m in scale, the rooms being arranged on all the sides. The walls are made of laterite earth of 400mm thickness to up to 600mm in thickness, with roof being supported by timber posts. Doors and window shutters are made of carved wood and traditional Yoruba motifs like geometric patterns and figurative scenes are represented on them. Outdoor temperature was recorded at 34.0C while the interior temperature was 27.5C which shows the effectiveness of the thermal lag by approximately 6.5C.

The courtyard is the main social area and family members were seen cooking, washing, and chatting in the central shaded courtyard. The natural ventilation is brought about through the stack effect: heat air goes up and escapes through the roof vents while the cooler air at ground level gets inside through the doorways to the courtyard. Yet, the compound is showing signs of aging. Parts of the earth walls reveal erosion due to the insufficient roof overhangs and the lack of maintenance. One family has gone ahead to build a concrete block extension which not only breaks the symmetry of the courtyard but also diminishes the cross-ventilation. The caretaker, a man of seventy years, indicated that younger family members are more inclined to set up modern houses in other locations thereby the compound is prone to decay over time. This example illustrates the great functionality of traditional spatial as well as material principles, but at the same time their susceptibility to abandonment and changes in the urban environment when the cultural ties to them become weaker.

Case 5: Church Combining Modern and Traditional Elements - St. Peter's Cathedral (First Church in Nigeria, Built 1844)

St. Peter's Cathedral is situated in the Ake part of Abeokuta and is historically one of the earliest church buildings in Nigeria. It was opened in 1844 and built by the Church Missionary Society. The first building was made of wood and pre-fabricated materials that were brought from England. Still, the church building has been repaired and enlarged many times, the major ones being in 1978 and 2010. The current church building is a mixture of styles: a reinforced concrete frame and aluminium roofing sheets make up the main auditorium while a functional veranda runs along the southern facade giving a shaded outdoor area for those worshippers who come before the time of service. Sometime during the service observation on Sunday, it was noticed the veranda was used by about forty people to pray and talk socially before going to the main hall. Commissioned from local craftspeople, the entrance porch is decorated with wooden panels carved in Yoruba style depicting biblical stories through the traditional Yoruba art language. A small open area on the east side which was created during the 2010 expansion, is a space for church committees and funeral receptions. The main auditorium, having about 800 seats, depends on the ceiling fans and louvered windows. Temperature inside was measured at 32.0C during the 10:00 a.m. service with the temperature outside being 33.5C. Although the aluminium roof is a good and low-cost material, it lets a lot of the sun's heat in, and the concrete walls do not have enough thermal mass as traditional earth construction.

The church is a partial story of the success: the veranda and courtyard are social and climatic buffers and work well, but the use of the modern materials and construction methods greatly reduce the passive cooling that traditional architecture was able to achieve. The carved panels give the church a bit of cultural authenticity, but they are put on a totally modern structure rather than being part of a well-chosen hybrid system.

All these five cases reveal that to successfully embed indigenous Yoruba architecture in the new forms, one needs to integrate spatial concepts (courtyards, verandas), material traditions (earth, timber), and craft expertise. Case 1, the Ibara villa, failed because ornamental features were merely pasted on without any structural or spatial considerations; Case 2, the grammar school, failed because indigenous principles were completely ignored; Case 3, Itoku Market, failed because local distinctiveness was replaced by global commercial architecture. The Isale Igbeyin compound (Case 4) was functionally successful but is in a state of decay due to lack of maintenance and the younger generation getting away from it. St. Peter's Cathedral (Case 5) was able to partially succeed through the use of functional verandas and cultural craft; Though, it is still compromised by the use of modern materials which are poor performers climatically. These outcomes lend credence to the idea that genuine integration must reach the level of structural involvement with the spatial logic, material intelligence, and environmental responses that characterized indigenous Yoruba architecture rather than remaining at the level of superficial aesthetic appropriation.

4.8 Discussion

The data we have obtained from the study indicate that there is still a great deal of acknowledgment of the indigenous Yoruba architectural features as functionally relevant; Yet, in the present scenario, the design element has been either neglected or used only on the surface level. The 92% acknowledgment of courtyard ventilation as a relevant design element against the 35% actual courtyard incorporation is just one illustration of the knowledge-practice gap. This gap is by no means an educational one (knowledge-wise, architects are the top scorers) but rather a systemic one: practice is severely limited by the lack of preferences for the market, the scarcity of effectively skilled artisans, and the absence of regulations even in cases where the knowledge is available.

The dominance of decorative integration (67.2%) over structural (7.2%) confirms the prevalence of nostalgic pastiche Mike et al. (2018) warned against. Yet architect preference for structural integration (62%) suggests that professional values favour deeper engagement, creating opportunity for systemic reform. The case studies demonstrate that functional integration is possible when spatial, material, and craft principles are combined, as in the traditional compound and partially in the church.

The barriers here are unevenly spread: architects require codes and client education, builders need artisan training and materials standards, and residents have to be made aware of the benefits of climatic and cultural. One intervention alone cannot change the situation. Still, a joint action through education standardization policy, and demonstration may be able to create the right conditions for change.

5. Conclusion and Recommendations

5.1 Conclusion

The decline of indigenous architectural identity in Abeokuta is not an unavoidable consequence of modernization but rather the result of certain systemic barriers that can be addressed through intervention. A very high awareness of the functional aspects (88-92%) indicates that indigenous knowledge is still culturally rooted, although the actual practice is changing.The discrepancy between recognition and integration (7.2% complete, 68% superficial or absent) quantifies the knowledge-practice gap that this study addresses.

Meaningful integration requires moving beyond decorative appropriation toward engagement with structural, spatial, and material principles. The courtyard system, thick earthen walls, and craft integration are not merely aesthetic preferences but functional responses to climate and culture that remain relevant to contemporary challenges. Case studies demonstrate that successful integration is possible when these principles are combined within modern typologies, while superficial approaches fail both functionally and culturally.

Barriers are primarily systemic and economic rather than technical or knowledge-based. Client preferences, artisan scarcity, and regulatory gaps create market and professional constraints that educational reform alone cannot overcome. However, the strong professional preference for structural integration (62%) and broad support for comprehensive strategies (all means above 4.0) indicate readiness for change if enabling conditions are created.

5.2 Recommendations

- Curriculum Reform: It is a must for architecture schools to include indigenous knowledge in the main design courses, and projects in studios should reflect the integration of spatial and material aspects. The accreditation of professionals should be tied to a demonstration of one's knowledge of indigenous methods.
- Hybrid Material Standards: The Standards Organisation of Nigeria needs to create a certification for compressed earth blocks, bamboo reinforced composites, and chemically treated woods, that will allow architects to specify such materials confidently.
- Policy Incentives: Procurement of state-owned buildings must involve a scoring system that factors cultural identity; planning permission must be in line with the acceptance of indigenous design principles; tax rebates should be made available for local materials.
- Artisan Training: Vocational and technical schools must teach trades and crafts of the past and building techniques of today, so that the wisdom of the older generations can be passed on.
- Demonstration Projects: Authorities and educational institutions should set up pilot tangible projects that will showcase the performance, cost and satisfaction of such renovations and lead on to bolder market perceptions.
- Community Participation: The design approach has to be a communication medium, and through it a reconnection of the community members and the knowledge holders must be what leads to the spatial and cultural integration that is authentic.

5.3 Contribution and Future Research

This study contributes empirical quantification of the knowledge-practice gap, ranked barrier analysis across stakeholders, and evidence-based strategies for integration. Future research should examine thermal performance through instrumental measurement, track integrated buildings longitudinally, conduct comparative studies across Nigerian cities, and analyse lifecycle costs of integrated versus conventional buildings.

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