

Integrating Indigenous Nigerian Landscape Practices into Contemporary Urban Design Using Ijede Lagos State as A Case Study

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Abstract—Rapid urbanization in Nigeria has largely prioritized imported planning models over indigenous ecological knowledge and culturally embedded spatial systems. This study explored how indigenous Nigerian landscape practices can inform contemporary urban design, using Ijede, Lagos State, as a case study. The research aimed to develop a context-responsive urban design framework grounded in local environmental intelligence. Through site observation, spatial analysis, and semi-structured interviews, the study examined traditional landscape principles, evaluated emerging development patterns, and identified opportunities for meaningful integration. Findings revealed significant vegetation loss (estimated at 15–20% cover), widespread disruption of natural drainage systems, and the erosion of communal open spaces. The study proposes a conceptual model intended to strengthen sustainability, reinforce cultural identity, and enhance climate responsiveness within peri-urban communities.

Index Terms—Climate-responsive planning, Cultural identity, Indigenous landscape practices, Peri-urban transformation, Urban design, Vernacular systems.

I. INTRODUCTION

Rapid urbanization across Nigeria has intensified spatial, environmental, and socio-cultural challenges within both metropolitan cores and peri-urban settlements. Lagos State, as Nigeria's primary economic hub, represents one of the fastest growing urban regions in sub-Saharan Africa. This accelerated growth has resulted in ecological degradation, infrastructural stress, loss of biodiversity, and the gradual erosion of indigenous spatial identities (Unegbua et al., 2024). Peri-urban communities such as Ijede in Ikorodu Local Government Area are

increasingly affected by uncoordinated expansion, land use transformation, and environmentally insensitive development patterns (David, 2020).

Historically, Nigerian settlements were structured through indigenous landscape systems that harmonized ecological adaptation with socio-cultural organization. These systems incorporated courtyards, sacred groves, vegetative buffers, communal open spaces, and water bodies that functioned as climatic moderators and social integrators (Adedeji & Bigon, 2024). However, contemporary planning approaches often privilege imported urban design models that inadequately respond to local environmental realities and cultural frameworks (Akpami & Olanusi, 2025). Recent scholarship emphasizes the urgency of integrating climate-responsive and biophilic strategies into Nigerian architectural and urban practice (Kalu et al., 2025). Yet, limited research has systematically explored how indigenous Nigerian landscape practices can be operationalized within contemporary urban design frameworks in peri-urban contexts. As Ademakinwa et al. (2024) demonstrated in their study of Caleb University, Imota – a neighbouring community to Ijede – environmental quality directly influences user well-being and performance, suggesting that spatial interventions in green spaces would similarly affect community engagement.

This study therefore investigated how indigenous landscape knowledge systems can be integrated into contemporary urban design strategies to enhance ecological performance, cultural continuity, and spatial resilience in Ijede, Lagos State.

1.1 Statement of the Problem

Peri-urban settlements in Lagos State are experiencing rapid transformation without adequate ecological planning mechanisms. The consequences include:

Severe vegetation loss and biodiversity decline

Increased flooding due to poor drainage and land modification

Disconnection from indigenous spatial identity

Inadequate public open spaces

Weak integration of passive environmental strategies

While sustainability discourse in Nigeria continues to expand, practical frameworks that synthesize indigenous ecological knowledge with contemporary urban design remain underdeveloped (Unegbua et al., 2024). This disconnect limits the capacity of urban design interventions to respond meaningfully to local climate, culture, and community systems. These challenges disproportionately affect low-income residents and contribute to recurrent seasonal flooding, with over 60% of low-lying residential zones in Ijeda experiencing inundation (field observation, 2025).

1.2 Aim and Objectives

Aim

The aim of this research was to develop a context-responsive urban design framework that integrates indigenous Nigerian landscape practices into contemporary peri-urban planning strategies, using Ijeda, Lagos State as a case study, in order to enhance environmental sustainability, socio-cultural continuity, and spatial resilience within rapidly urbanizing communities.

Objectives

The objectives of this research are to:

- 1) examine indigenous Nigerian landscape principles and their ecological functions.
- 2) To assess contemporary urban design practices in peri-urban Lagos.
- 3) To evaluate environmental and spatial challenges in Ijeda.

- 4) To identify transferable indigenous strategies suitable for modern urban application.

- 5) To develop a design framework that integrates indigenous ecological knowledge with contemporary urban systems.

1.3 Significance of the Study

This research contributes to architectural scholarship by advancing ecological urbanism within the Nigerian context. It bridges vernacular landscape wisdom with contemporary sustainability discourse and provides a structured framework for architects, planners, and policymakers seeking culturally grounded design solutions. By situating the research in Ijeda – a semi-urban community undergoing transition – the study provides practical insights into how indigenous knowledge systems can inform spatial resilience strategies in similar Nigerian peri-urban environments.

II. LITERATURE REVIEW

Understanding the relationship between indigenous landscape practices and contemporary urban design requires an interdisciplinary review that spans sustainable urbanism, ecological adaptation, vernacular knowledge systems, and peri-urban growth dynamics within the Nigerian context. Rapid urbanization in Nigeria has placed tremendous pressure on land resources, infrastructure, social systems, and environmental sustainability (Unegbua et al., 2024). In cities such as Lagos, the tension between imported planning paradigms and traditional environmental logics has resulted in spatial systems that often neglect ecological performance and socio-cultural heritage, thereby exacerbating climate vulnerability and environmental degradation (Unegbua et al., 2024; Mokunfayo & Babatunde, 2018).

2.1 Indigenous Landscape Systems and Ecological Knowledge

Indigenous spatial logics in Nigeria have been historically informed by a deep understanding of local environmental conditions, social organization, and climatic responsiveness. These systems were not merely aesthetic expressions but functioned as adaptive mechanisms that shaped human settlement and environmental resilience (Gidado, 2025). For

example, courtyard typologies, shaded markets, sacred groves, and vegetation corridors served multiple ecological purposes including passive cooling, wind modulation, water retention, and biodiversity preservation (Gidado, 2025). Ethnographic studies across northern and southern Nigeria demonstrate how these spatial configurations enabled socio-ecological balance and cultural continuity, and provided relevant ecologies for community interaction, ritual practice, and climate adaptation.

Although specific to Katsina State, the principles derived from this research – such as communal spatial organization, passive cooling through shaded environments, and multifunctional landscape corridors – offer transferable strategies for peri-urban settlements in southwest contexts like Ijeda (Gidado, 2025). The indigenous framework here aligns with broader ecological urbanism theories that posit vernacular knowledge as a valuable resource for sustainable design in contemporary cities (Adediji, 2023).

2.2 Contemporary Nigerian Urban Design and Sustainability Discourse

Recent scholarship on Nigerian architecture and urban sustainability emphasizes the need to integrate passive, biophilic, and climate-responsive strategies within modern design practice. A systematic review of climate-responsive design in Nigerian architecture highlights both the performance benefits and the limited adoption of biophilic and passive measures such as shading, natural ventilation, and water features (Kalu et al., 2025). This underutilization reflects persistent barriers including weak regulatory frameworks, limited awareness among practitioners, and inadequate policy enforcement, which collectively hinder the diffusion of sustainable design paradigms in the built environment (Kalu et al., 2025).

Such studies reinforce the argument that modern Nigerian urbanism often overlooks indigenous ecological wisdom, despite demonstrable benefits to comfort, energy efficiency, and human wellbeing. This finding is consistent with Adeyemi et al., (2024), who established that environmental conditions directly influence user outcomes – in their case, students' academic deliverables. By extension, the quality of green spaces similarly affects community

usage patterns and satisfaction. By foregrounding local landscape strategies such as vegetation integration, water bodies, and micro-climate responsive form, contemporary design can reconcile functional needs with environmental performance in peri-urban settings.

2.3 Urbanization, Peri-Urban Dynamics, and Planning Challenges in Lagos

The Lagos megacity exemplifies the transformative pressures of urbanization and the complexities of sustainable development in the Nigerian context. Lagos's demographic explosion, infrastructural strain, and environmental vulnerability have prompted increased scholarly attention on sustainable urban planning and governance frameworks (Unegbua et al., 2024; Abubakar et al., 2020).

Systematic studies of urban planning practices in Lagos reveal a planning system that, although grounded in formal legislative structures like the Nigerian Urban and Regional Planning Act, often struggles with implementation due to weak institutional capacity, limited community engagement, and resource constraints (Unegbua et al., 2024). Additionally, peri-urban fringes such as Ibeju-Lekki have demonstrated the multi-faceted impacts of peri-urban expansion on housing, environmental quality, and urban service delivery (Mokunfayo & Babatunde, 2018). Although these studies focus on areas like Ibeju-Lekki, similar patterns of uncoordinated expansion are evident in Ijeda, where land use transformation has accelerated since 2015 (David, 2020).

These studies highlight common environmental issues such as flooding, vegetation loss, and ecosystem fragmentation, which are symptomatic of rapid urban growth and insufficient integration of ecological strategies in planning. This urban imbalance underscores the need for design and policy frameworks that foreground environmental systems including green infrastructure, water management, and culturally grounded space making in peri-urban development interventions.

2.4 Gaps in the Literature and Research Imperatives

Despite growing interest in vernacular knowledge and sustainability in Nigerian scholarship, there remains a lack of systematic frameworks that operationalize indigenous landscape strategies within

urban design practice. Many studies identify the ecological and cultural value of traditional spatial systems but stop short of delivering transferable models for design implementation in peri-urban contexts. Further, there is limited empirical work that explicitly correlates indigenous ecological practices with measurable improvements in environmental performance in peri-urban environments.

This gap points to a critical necessity for research that synthesizes indigenous ecological principles into design parameters, evaluates how these strategies can be integrated into formal planning and design processes, and explores community participation mechanisms for co-defining design interventions with local populations. Such inquiry is fundamental to bridging theoretical insights with practical, place-based design strategies that can inform sustainable peri-urban transformation in Nigeria.

2.5 Theoretical Framework

This study is grounded in two complementary theoretical perspectives. First, Ecological Urbanism provides a lens for understanding cities as integrated socio-ecological systems rather than purely built artifacts (Mostafavi & Doherty, 2010). This framework emphasizes the role of landscape, ecology, and environmental performance as central to urban design – a position that aligns closely with indigenous landscape logic.

Second, Post-Colonial Urbanism informs the study's critique of imported planning models and its advocacy for knowledge systems rooted in local contexts (Robinson, 2006). This perspective recognizes that urban design in formerly colonized regions must reckon with the marginalization of indigenous knowledge and actively work to recenter it within planning discourse. Together, these frameworks justify the study's interpretivist orientation and its commitment to developing context-responsive design strategies.

III. METHODOLOGY

3.1 Research Design and Philosophical Orientation

This study adopted a qualitative case study research design grounded in an interpretivist epistemological framework. The interpretivist approach is appropriate because the research sought to understand indigenous landscape practices not merely as physical artifacts,

but as socio-cultural and ecological knowledge systems embedded within community life. Such knowledge cannot be adequately captured through purely quantitative metrics; rather, it requires contextual interpretation and spatial analysis. The researchers acknowledge that indigenous knowledge is co-constructed through dialogue; therefore, findings reflect both community perspectives and the researchers' interpretive lens.

The case study strategy is particularly suited to investigating contemporary phenomena within real-life contexts where boundaries between phenomenon and setting are not clearly evident (Yin, 2018). Since the research examined how indigenous landscape principles can be integrated into the contemporary peri-urban fabric of Ijeda, an in-depth contextual study was necessary to understand spatial patterns, ecological systems, and community dynamics holistically.

3.2 Study Area Selection: Ijeda, Lagos State

Ijeda, located in Ikorodu Local Government Area of Lagos State, was purposively selected as the case study site due to its transitional peri-urban character. The community exhibits characteristics of both rural settlement morphology and expanding urban development pressures. According to spatial mapping studies, Ijeda demonstrates progressive land-use transformation, infrastructural expansion, and ecological modification typical of peri-urban Lagos (David, 2020) (see Figure 3.1 – Study Area Map).

The site is particularly appropriate for this research because: (1) it retains traces of indigenous settlement structures and community-based land organization; (2) it is currently undergoing rapid spatial and infrastructural change; and (3) it experiences environmental stressors such as vegetation loss, drainage challenges, and informal development patterns.

3.3 Data Collection Methods

To ensure methodological triangulation and research validity, the study employed multiple data collection techniques.

3.3.1 Systematic Literature Review

A structured review of peer-reviewed Nigerian academic literature was conducted to establish theoretical and contextual foundations. Sources included journal articles on indigenous landscape

systems, climate-responsive architecture, ecological urbanism, and peri-urban development in Nigeria.

3.3.2 Field Observation and Spatial Documentation

Primary fieldwork was conducted in Ijeda to document existing spatial, environmental, and morphological conditions. Observation methods included land-use mapping, vegetation distribution analysis, circulation and connectivity mapping, drainage and hydrological assessment, and public space documentation. Photographic documentation and sketch analysis were employed to record spatial typologies, building orientation patterns, open-space structures, and landscape configurations.

3.3.3 Semi-Structured Interviews

Semi-structured interviews were conducted with selected stakeholders, including community elders, local residents, built environment professionals, and informal land developers. A total of 15 semi-structured interviews were conducted (10 community members, 3 built environment professionals, and 2 informal developers), each lasting 30–45 minutes. Participants were selected through purposive and snowball sampling. The interviews explored traditional land-use practices, vegetation management systems, communal spatial traditions, and perceived environmental changes over time.

3.3.4 Spatial and Environmental Analysis

Spatial analysis was conducted to evaluate ecological performance indicators relevant to urban design integration. These included green coverage ratio, surface permeability assessment, open-space distribution analysis, and microclimatic responsiveness (shade patterns and airflow corridors). Morphological mapping techniques were used to analyze settlement density, block structure, and circulation hierarchy. Thematic coding was performed manually using a codebook. Spatial analysis was supported by QGIS 3.28 and field-measured transects.

3.4 Data Analysis Procedures

Data analysis followed a thematic and spatial synthesis model.

3.4.1 Thematic Analysis

Interview transcripts and observational notes were coded using thematic categorization. Core themes identified included communal spatial organization, passive climatic adaptation, vegetative buffering systems, water integration practices, and social-ecological interaction patterns. These themes were cross-referenced with literature findings to identify patterns of continuity and divergence.

3.4.2 Spatial Synthesis

Spatial data collected during fieldwork were analyzed to determine areas of ecological degradation, potential zones for green infrastructure intervention, disconnected public spaces, and flood-prone areas. The results were synthesized to develop an Indigenous Integration Framework, linking traditional ecological strategies to contemporary urban design responses.

3.5 Development of the Design Framework

The final stage of the methodology involved translating research findings into a structured design framework (presented in section 4.9). This framework integrates indigenous vegetation systems into green infrastructure networks, communal courtyards into contemporary public open spaces, water bodies into sustainable urban drainage systems, and sacred groves into biodiversity conservation zones.

3.6 Validity, Reliability, and Rigor

To ensure methodological credibility: triangulation was achieved through multiple data sources (literature, interviews, observation, spatial mapping); peer-reviewed Nigerian academic sources were prioritized to maintain contextual accuracy; findings were cross-validated between qualitative insights and spatial measurements; and reflexive documentation was maintained throughout fieldwork to reduce researcher bias. Interview summaries were returned to three community elders for validation (member checking).

3.7 Ethical Considerations

The study adhered to ethical research standards. Participation in interviews was voluntary and informed consent was obtained. Indigenous knowledge shared by participants was treated respectfully and contextualized within academic

interpretation without misrepresentation. Confidentiality of respondents was maintained, and data were used strictly for scholarly purposes.

3.8 Methodological Limitations

While the qualitative case study approach provides depth, its findings are context-specific and may not be universally generalizable. Additionally, limited access to archival indigenous documentation necessitated reliance on oral histories and field observation. However, triangulation mitigates this limitation. No instrumental environmental data (e.g., air temperature, soil permeability, infiltration rates) were collected; therefore, performance claims are based on observation and qualitative reporting rather than measured metrics.

IV. ANALYSIS AND DISCUSSION OF FINDINGS

This section presents a comprehensive analysis of empirical data derived from field observations, spatial mapping, and semi-structured interviews conducted in Ijede, Lagos State. The analysis is framed within the study's interpretivist orientation, which positions indigenous landscape practices not merely as physical artifacts but as embedded socio-ecological systems.

4.1 Spatial Morphology and Land Use Structure

The spatial configuration of Ijede reveals a complex and evolving peri-urban morphology characterized by the juxtaposition of residual indigenous settlement patterns and emergent, largely unregulated urban forms. Rather than exhibiting a coherent planning structure, the settlement demonstrates a diffused and fragmented spatial logic, where land-use allocation is driven primarily by incremental development rather than strategic planning.

Field observations indicate that residential use overwhelmingly dominates the spatial composition of the area, accounting for approximately 65–70% of total land coverage. However, this dominance is not accompanied by commensurate provision for public open spaces, ecological buffers, or social infrastructure. This imbalance suggests a mono-functional spatial tendency, which undermines both environmental resilience and social vitality.

From a morphological perspective, the following characteristics were identified: irregular plot subdivision patterns, reflecting informal land

allocation processes; weak spatial hierarchy, with limited distinction between primary, secondary, and tertiary circulation networks; and encroachment on environmentally sensitive zones, particularly natural drainage paths. (see Figure 4.1 – Land Use Map of Ijede).

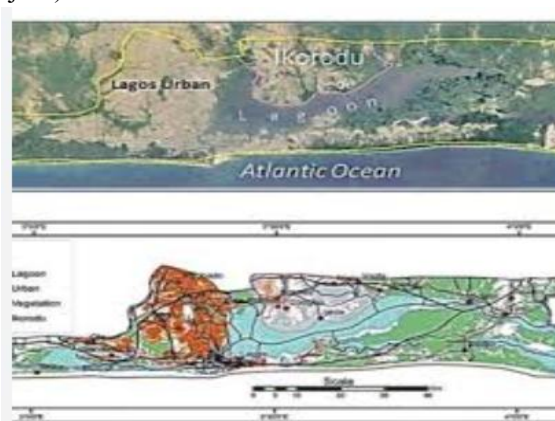


Figure 4.1 – Land Use Map of Ijede

4.2 Vegetation Systems and Ecological Performance

A critical dimension of the study concerns the transformation of vegetation systems and their implications for ecological performance. Spatial analysis reveals a significant reduction in indigenous vegetation cover, with current estimates ranging between 15% and 20% – a figure that is notably low for a peri-urban landscape. Elder interviews suggest that vegetation cover exceeded 50% in the 1980s, representing a decline of over 60% in four decades.

Historically, vegetation in Ijede functioned as a multi-scalar ecological infrastructure, performing roles that included microclimate regulation through shading and evapotranspiration, wind modulation and air quality improvement, soil stabilization and erosion control, and cultural and social functions within communal spaces.

The erosion of this system has resulted in a measurable decline in environmental quality. The study identifies three primary consequences:

Thermal Stress Intensification: The reduction in tree canopy has increased solar exposure, contributing to elevated surface and ambient temperatures. This condition aligns with emerging patterns of localized urban heat island effects in peri-urban environments.

Biodiversity Loss and Habitat Fragmentation: The replacement of vegetated land with built surfaces has

disrupted ecological networks, leading to reduced species diversity and ecological resilience.

Diminished Environmental Buffering Capacity: The absence of vegetative buffers has heightened exposure to environmental stressors such as wind, dust, and noise.

4.3 Hydrological Disruption and Flooding Vulnerability

The hydrological analysis of Ijede reveals a landscape undergoing significant environmental stress due to the disruption of natural water systems. Indigenous drainage patterns, which historically facilitated the absorption, retention, and gradual release of stormwater, have been extensively altered or eliminated.

The study identifies the following key hydrological challenges: obstruction of natural drainage corridors due to building encroachment; increased surface impermeability resulting from widespread use of concrete and asphalt (approximately 70% of newly developed plots use concrete paving, compared to less than 10% in traditional compounds); and absence of integrated drainage infrastructure, particularly in newly developed areas.

These conditions have collectively contributed to increased flood vulnerability, particularly in low-lying residential zones. Seasonal flooding is now a recurrent phenomenon, reflecting a systemic failure to integrate hydrological considerations into urban development processes.

4.4 Transformation of Public Space and Socio-Cultural Dynamics

The spatial reconfiguration of Ijede has had profound implications for public space and social interaction. Traditional communal spaces, which once functioned as nodes of social cohesion and cultural expression, have largely disappeared or been subsumed by private development.

In their absence, social activities have been displaced into informal and often inadequate spaces, including roadside verges, vacant plots, and religious and institutional compounds. This spatial displacement reflects a broader transition from collective spatial organization to fragmented individualism, with significant implications for community cohesion.

4.5 Indigenous Knowledge Systems: Interpretations from Interviews

The qualitative data derived from interviews provides critical insight into the nature and function of indigenous landscape practices in Ijede. Respondents, particularly community elders, articulated a deeply integrated relationship between spatial organization, ecological processes, and cultural practices.

Key elements of indigenous systems identified through interviews include:

Courtyard-Based Spatial Organization – Serving as microclimatic regulators and social interaction spaces
Sacred Groves and Vegetation Clusters – Functioning as ecological reserves and cultural landmarks

Water Bodies and Natural Drainage Systems – Supporting both environmental management and community livelihoods

Communal Open Spaces – Facilitating social gatherings, conflict resolution, and cultural events

Example quote (Elder, male, 72): "In the past, every compound had its own shade tree and open space. Now, only the churches have open land."

These elements were not discrete interventions but components of a holistic environmental system rooted in experiential knowledge and adaptive practices.

4.6 Perceptions of Urban Change and Environmental Decline

Across all respondent categories, there is a consistent perception that recent urbanization has had predominantly negative environmental and spatial impacts. The most frequently identified issues include vegetation loss, increased flooding, and the disappearance of communal spaces.

However, a critical insight emerging from the data is the gap between awareness and agency. While residents demonstrate a clear understanding of environmental degradation, there is limited knowledge of how design and planning interventions can address these challenges. This gap implies that the proposed design framework must include participatory tools that translate awareness into actionable community input.

4.7 Institutional and Professional Constraints

The perspectives of built environment professionals reveal systemic challenges within the planning and

development framework. These include weak enforcement of planning regulations (for example, the Lagos State Urban and Regional Planning Law of 2019 mandates green areas, but enforcement in Ijede is virtually absent); limited institutional capacity for ecological planning; and absence of formal mechanisms for integrating indigenous knowledge.

4.8 Discussion and Synthesis of Findings

The findings of this study reveal a fundamental tension between two paradigms: indigenous landscape systems, characterized by integration, adaptability, and ecological sensitivity; and contemporary urban development, characterized by fragmentation, standardization, and environmental neglect.

This tension has produced a range of spatial and environmental challenges, yet it also presents an

opportunity for synthesis. The persistence of indigenous knowledge within the community suggests that a hybrid approach combining traditional ecological principles with modern design methodologies can provide a viable pathway toward sustainable urban development. While these findings are specific to Ijede, the hybrid model may be transferable to other Nigerian peri-urban settlements with similar indigenous legacies.

4.9 Proposed Design Framework

Based on the findings synthesized above, this section presents the proposed design framework (Objective 5). The framework translates indigenous ecological strategies into contemporary urban design interventions using a direct mapping approach:

Indigenous Practice	Ecological Function	Contemporary Design Intervention
Courtyard typologies	Passive cooling, social interaction	Semi-open public spaces with shaded seating
Sacred groves	Biodiversity conservation, cultural identity	Protected biodiversity zones integrated with community access
Vegetation buffers	Microclimate regulation, wind modulation	Green corridors along streets and between buildings
Natural drainage channels	Stormwater management, flood mitigation	Sustainable Urban Drainage Systems (SuDS) with permeable surfaces
Communal open spaces	Social cohesion, cultural events	Multi-functional public squares with flexible programming

The framework is not merely descriptive but prescriptive, offering adaptable guidelines for peri-urban design implementation. Key design principles derived from the framework include:

- 1) Prioritize vegetation as infrastructure – not as ornamentation
- 2) Restore hydrological connectivity through permeable surfaces and preserved drainage lines
- 3) Design for social interaction using courtyard-derived spatial configurations
- 4) Integrate cultural landmarks (e.g., sacred groves) into green networks

- 5) Adopt participatory processes that engage community knowledge holders

V. CONCLUSION

5.1 Synthesis of Key Findings

The research set out to investigate how indigenous Nigerian landscape practices can be integrated into contemporary urban design frameworks within a peri-urban context, using Ijede in Lagos State as a case study. The findings, derived from a triangulated methodology combining spatial analysis, field observation, and stakeholder interviews, reveal a

complex interplay between environmental degradation, spatial transformation, and cultural dislocation.

At a fundamental level, the study establishes that indigenous landscape systems historically functioned as integrated socio-ecological infrastructures. These systems were not incidental or purely cultural artifacts but were deeply embedded in the environmental logic of the settlement. Through mechanisms such as vegetative buffering, courtyard spatial organization, and natural water management, they provided a high degree of climate responsiveness, ecological balance, and social cohesion.

However, the findings also demonstrate that these systems have been significantly eroded as a result of rapid and largely unregulated urbanization. The transformation of Ijede's spatial structure reflects a shift toward development patterns that prioritize immediate land-use gains over long-term environmental sustainability. This has resulted in several interrelated challenges, including reduced vegetation cover (15–20%), increased flooding vulnerability, and the disappearance of communal open spaces.

5.2 Conclusion

This study concludes that the integration of indigenous landscape practices into contemporary urban design is not only viable but essential for achieving sustainable and resilient development in peri-urban Nigeria. The case of Ijede demonstrates that the exclusion of indigenous ecological systems from urban development processes has contributed directly to environmental degradation, spatial inefficiency, and socio-cultural fragmentation.

Indigenous landscape practices embody a set of principles that are highly aligned with contemporary sustainability discourse. These include climate responsiveness, resource efficiency, ecological integration, and community-centered spatial organization. Their continued marginalization therefore represents a missed opportunity within current urban design practice.

The findings further suggest that the challenges facing peri-urban settlements such as Ijede cannot be effectively addressed through conventional planning approaches alone. Instead, there is a need for a hybridized design paradigm that synthesizes

indigenous knowledge with contemporary technological and regulatory frameworks. Such an approach would enable the development of urban environments that are not only functional and efficient but also culturally grounded and environmentally responsive.

5.3 Recommendations

5.3.1 Design and Architectural Recommendations

Key strategies include the reintroduction of vegetation systems as primary design elements, the incorporation of courtyard typologies and semi-open spatial configurations, the adoption of water-sensitive urban design principles, and the design of multi-functional public spaces that reflect indigenous communal spatial patterns.

5.3.2 Planning and Policy Recommendations

Key recommendations include the integration of indigenous ecological principles into planning regulations, the strengthening of planning enforcement mechanisms, the development of context-specific planning frameworks for peri-urban areas, and the establishment of interdisciplinary planning approaches.

5.3.3 Community and Participatory Recommendations

Recommendations include the adoption of participatory design methodologies, the implementation of awareness and education programs focused on sustainable landscape practices, and the revival and adaptation of traditional communal management systems.

5.3.4 Academic and Research Recommendations

Future research should focus on the development of quantitative metrics for evaluating the environmental performance of indigenous landscape systems, comparative studies across different Nigerian regions, and experimental research that tests integrated design frameworks in real-world settings.

5.3.5 Monitoring and Evaluation Framework

Establish baseline environmental indicators (vegetation cover, flood frequency, public space access) and repeat measurement every 3–5 years to assess the effectiveness of implemented interventions.

5.4 Contribution to Knowledge

This study makes a significant contribution to the field of architecture and urban design by demonstrating how indigenous landscape practices can be systematically analyzed and translated into contemporary design strategies. It advances the discourse on ecological urbanism by situating vernacular knowledge within a rigorous analytical framework and highlighting its relevance to current sustainability challenges.

5.5 Limitations of the Study

While the study provides valuable insights, it is important to acknowledge its limitations. The reliance on qualitative data and a single case study limits the generalizability of the findings. Additionally, the absence of extensive quantitative environmental data constrains the ability to measure the precise performance impacts of indigenous landscape systems. No longitudinal data were collected to track changes over time.

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