E-ISSN: 1116 - 3240 P-ISSN: 3026-9334
MPRI-JAIMR | INTERNATIONAL JOURNAL OF AFRICAN INNOVATION & MULTIDSCIPLINARY RES.
VOL. 10 NO. 2 – OCTOBER, 2025

LOCAL KNOWLEDGE AND NEIGHBOURHOOD ECOLOGY IN INCREMENTAL HOUSING ARCHITECTURE: A STUDY OF OGHEDE COMMUNITY, BENIN CITY

ISIWELE A. J.; & IMOYERA. M. E.
Department of Architecture, Ambrose Alli University, Ekpoma, Nigeria.
DOI: https://doi.org/10.70382/mejaimr.v10i2.080

Abstract

This study investigates the influence of local knowledge and neighbourhood ecology on incremental housing architecture in Oghede, a peri-urban settlement on the fringes of Benin City, Nigeria. Using a qualitative case study design grounded in constructivist epistemology, the research draws on interviews, focus group discussions, and field observations to explore how residents build homes in stages using indigenous knowledge, social networks, and material improvisation. Findings reveal that housing production in Oghede is a deeply social and ecological process. Residents rely on inherited wisdom about soil behavior, flooding, and building orientation, while neighbourhood ecology; manifested in labor reciprocity, informal credit systems, and shared infrastructure, enables construction despite economic constraints. The study highlights hybrid architectural forms that blend modern and traditional techniques, as well as symbolic expressions of identity in home design. By framing incremental housing as a rational, place-based, and culturally embedded practice, the study challenges the marginalization of informal settlements in urban planning discourse. It calls for policy frameworks that acknowledge the legitimacy and intelligence of community-driven housing strategies and supports a paradigm shift toward more inclusive, locally responsive urban development models.

Keywords: Local knowledge, Neighbourhood ecology, Incremental housing, Peri-urban settlements, Adaptive architecture, Community-based planning

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Introduction

Background of the Study

Urban housing in sub-Saharan Africa, particularly in rapidly expanding cities like Benin City, is undergoing dynamic transformation driven less by formal planning institutions and more by the everyday ingenuity of residents (Mabin et al, 2013; Ahmed, et al, 2025). At the heart of this transformation is the growing phenomenon of incremental housing; a process where individuals and households, often constrained by low incomes and limited access to formal housing finance, construct their homes in stages over time (Turner, 1976; Tipple & Korboe, 1998). This approach, while often labelled informal, is neither haphazard nor irrational; it is shaped by a web of local knowledge and embedded in the ecological and social fabric of the neighbourhood. Incremental building, a major feature of informal housing production in Nigeria has been observed to be fostered by local knowledge and neighbourhood ecology to varying extent.

Local knowledge refers to the unique, context-specific understanding that people develop through lived experiences within a particular environment (Yanow, 2003). It is often tacit, orally transmitted, and embedded in daily practices, shaping how communities interpret, respond to, and modify their surroundings (Agrawal, 1995; Chambers, 1983). In the domain of housing and urban development, local knowledge encompasses how residents draw upon indigenous building methods, resource availability, and cultural spatial logic to design and expand their homes. It includes understandings of soil behaviour, climate-responsive construction, family structures, and symbolic arrangements and social issues around housing (Watson, 2009).

Neighbourhood ecology refers to the dynamic interplay between the physical environment, social structures, economic activities, and cultural practices within a localized residential setting (Galster, 2001; Sampson, Morenoff, & Gannon-Rowley, 2002). In urban African contexts, neighbourhood ecology reflects how informal networks, communal land access, shared infrastructure, and kin-based arrangements shape how spaces are used and adapted (UN-Habitat, 2010). It includes not just tangible features like housing density, drainage, or road networks, but also intangible dimensions such as social capital, collective efficacy, and informal governance. These factors influence how people build incrementally, secure land tenure, and maintain resilience in the face of environmental or economic shocks.

Incremental housing refers to a self-directed, step-by-step approach to building and expanding housing over time, based on the evolving needs and financial capacity of households (Turner, 1976; Hamdi, 2004). It is often practiced in informal or semi-formal urban settlements where conventional access to housing finance and formal development is limited. Rather than constructing a finished home all at once, residents

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begin with a basic structure (often a single room or core unit, and add rooms, stories, or facilities as resources permit. This process embodies flexibility and long-term planning while also reflecting localized coping strategies in response to economic precarity. Incremental housing is especially common in sub-Saharan Africa, where land is accessed through family ties or customary arrangements, and construction proceeds as a labor of family networks and social cooperation (Tipple & Korboe, 1998). The form and materiality of such housing often reflect a hybrid of traditional techniques and modern aspirations.

The peripheries of cities like Benin, areas such as Oghede, Ugbowo, and Oluku, represent a fertile ground for studying this intersection of concepts. These communities are often described as *low-brow* or *peri-urban fringe settlements*, marked by informal land acquisition, patchy infrastructure, and self-built housing forms. Yet, they are also spaces of active knowledge production, environmental adaptation, and community-based spatial logic (UN-Habitat, 2010). Local knowledge in these contexts comprises a rich corpus of building techniques, spatial organization, and environmental adaptation strategies that are passed down intergenerationally or learned through community observation. This includes decisions about siting buildings to avoid flood-prone areas, the use of available or recycled materials, and local understandings of space, family structure, and aesthetics (Watson, 2009; Agrawal, 1995). For instance, in Oghede, it is common to see homebuilders dig makeshift soak pits, orient buildings to prevailing winds, or mix materials with additives like charcoal or clay to enhance durability, practices derived not from formal architectural training but from embedded experiential knowledge.

These practices are situated within broader neighbourhood ecologies, which refer to the interaction of environmental, social, and economic systems within specific residential locales (Sampson, Morenoff, & Gannon-Rowley, 2002; Galster, 2001). In low-income areas, neighbourhood ecology plays a central role in shaping housing outcomes. Physical features such as topography, soil type, and drainage influence construction techniques, while social features, like communal land use practices, kinship networks, Labor sharing, and informal credit systems, facilitate building processes. The presence of informal suppliers, local artisans, and a culture of reciprocal exchange makes such neighbourhoods resilient despite institutional neglect (UN-Habitat, 2016; Gough, 1999).

The concept of incremental housing architecture thus emerges at the convergence of these forces. It is not merely a reflection of poverty, but a conscious response to it, reflecting a stepwise strategy of home construction that is attuned to fluctuating income, material availability, and household dynamics (Hamdi, 2004; Habraken, 1998). In many African cities, incremental housing constitutes the dominant mode of residential development for the urban poor, often accounting for the majority of housing stock outside formal estates or government schemes (Tipple, 2000). Studies in Ghana, Kenya, and Nigeria show that such housing developments are deeply shaped by the ecological

character of neighbourhoods and local forms of knowledge that serve as informal "building codes" (Kombe & Kreibich, 2000; Olajide, 2018).

In Benin City's peri-urban zones, these dynamics are increasingly visible as families build over decades, leveraging community knowledge, bartered labour, and locally sourced materials. Yet, such housing processes remain under-theorized in formal planning discourse and are often absent from government housing policy frameworks. This creates a disconnect between how people actually build and live, and how housing is envisioned at the policy level.

Hence, this study explores the influence of local knowledge and neighbourhood ecology on incremental housing architecture in the Oghede community. It aims to shed light on the informal yet intelligent systems that undergird housing production in low-income, peri-urban settings, and to contribute to a growing body of literature that validates resident-led housing as both adaptive and legitimate.

Statement of the Research Problem

Across much of the Global South, self-help and incremental housing remain the dominant means by which low-income urban residents secure shelter. These housing forms, gradually constructed through personal effort, social networks, and informal markets, have long been recognized as pragmatic responses to housing shortages and economic marginality (Turner, 1976; Tipple, 2000). However, despite decades of scholarship on informal housing, the conceptual and empirical integration of local knowledge and neighborhood ecology into analyses of self-help housing remains strikingly limited. The existing literature on incremental housing tends to focus overwhelmingly on architectural typologies, material choices, and comparative formal-informal dynamics, often emphasizing the physical outcomes of housing over the processes and community logics that shape them (AlSayyad, 2004; Tipple & Korboe, 1998). In many studies, self-help housing is examined through a technocratic lens, evaluating its compliance with planning standards or measuring it against ideal models of formal housing, while neglecting the underlying local epistemologies, environmental adaptations, and socio-cultural frameworks that inform how such housing is conceived, modified, and inhabited (Roy, 2005; Watson, 2009).

Where local knowledge and neighbourhood ecology are acknowledged, they are often treated superficially, as contextual footnotes rather than central analytical categories. This neglect overlooks the reality that housing in informal or peri-urban areas is not merely a shelter-building exercise but a deeply social and ecological practice, embedded in histories of land tenure, kinship systems, environmental know-how, and collective problem-solving (Agrawal, 1995; Habraken, 1998). For instance, studies rarely explore how knowledge of drainage patterns, local soil behaviour, or communal land negotiation

rituals influence housing decisions in a neighbourhood. Similarly, the ways in which neighbourhood-level interactions, such as material sharing, informal lending, and cooperative labor, sustain housing efforts are under-researched (UN-Habitat, 2010; Kombe & Kreibich, 2000).

In the specific context of Benin City and its outskirts, such as the Oghede community, this gap is even more pronounced. These peri-urban zones are shaped by a hybrid of customary land allocation, rural-urban transition, and infrastructural improvisation, yet scholarly attention remains fixated on urban housing policy failures or the aesthetics of informality (Olajide, 2018; Gough, 1999). The lived experiences and embodied knowledge of local artisans and residents, who build homes over time using recycled materials, social labor, and intuitive ecological assessments, remain largely invisible in architectural and planning literature.

This research therefore emerges from a critical gap: while incremental housing is extensively studied, the dynamics of local knowledge and neighborhood ecology that drive and sustain such housing remain marginalized or oversimplified. There is a need to reframe housing studies to not merely document what is built, but to understand how and why it is built in the ways it is, foregrounding the logic, agency, and meaning-making practices within local communities.

Research Objectives

1. To examine how local knowledge informs the processes, materials, and spatial decisions involved in incremental housing development in Oghede community, Benin City.
2. To analyze the role of neighborhood ecology; social networks, environmental conditions, and informal economic practices, in shaping the architecture and growth patterns of self-help housing in peri-urban settlements.

Review of Relevant literature

The literature on self-help housing and urban informality show ideas that range from the agency of residents in shaping their built environments to the socio-spatial dynamics of informal settlements. These works collectively challenge conventional housing policies that prioritize state or market-driven solutions, instead emphasizing the ingenuity of grassroots urbanism. A recurring argument across some scholarly works is that residents possess embedded, experiential knowledge that shapes housing practices more effectively than formal planning. Turner's (1976) foundational work frames self-help housing as a process where dwellers, rather than external experts, determine their own spatial needs. This perspective shifts housing from a static "product" to a dynamic "verb," emphasizing adaptability and user autonomy. Similarly, Watson (2009) critiques

Northern-centric planning paradigms, arguing that African cities operate on indigenous logics that formal systems often ignore. For Watson, informality is not chaotic but a legitimate mode of urban production, rooted in local ways of knowing.

AlSayyad (2004) extends this by theorizing informality as an alternative epistemology, a system with its own rules and rationalities. However, while these scholars affirm the centrality of local knowledge, they rarely dissect its material and architectural manifestations. How does situated knowledge influence construction techniques, material choices, or spatial layouts? Olajide (2018) hints at this in Nigeria, where informal housing relies on kin networks and incremental financing. Olajide (2018,16) had this to say

> "The role of cultural capital is critical in improving the liveability of informal settlements…an indigenous environmental planning and management approach…recognises and accommodates the utilization of the local knowledge and practices of the people in settlement planning and administration"

Olajide highlights that improving informal settlements transcends technical fixes; it requires tapping into cultural capital and indigenous planning practices. Local actors bring to the table deep, generational understandings of how their settlements function, from drainage and waste disposal to spatial arrangements. This "indigenous environmental planning" aligns closely with the concepts of local knowledge and neighbourhood ecology, and indicates that without validating and integrating such know-how, top-down interventions often fail to deliver sustainable outcomes. yet his analysis does not go into how cultural or environmental factors shape building forms. This remains a critical gap: local knowledge is often invoked abstractly rather than analysed as a concrete force in housing design.

Neighbourhood Ecology: Social and Environmental Embeddedness

A less explicit but vital theme in the literature is the interplay between housing, social networks, and environmental adaptation. Kombe and Kreibich (2000) demonstrate how informal land management in Tanzania operates through community-based systems; local tenure arrangements, conflict resolution, and terrain-responsive building. Their work suggests that informal settlements are not lawless but governed by place-specific socio-spatial logics. Gough (1999) similarly highlights how urban youth in Ghana navigate shelter through social capital and spatial strategies, with environmental factors (e.g., drainage, accessibility) shaping where and how people build.

Yet, neighbourhood ecology is undertheorized. While Kombe and Kreibich touch on environmental adaptations, and Gough alludes to spatial survival tactics, few studies systematically examine how micro-level ecological dynamics, topography, climate, local

economies, influence housing outcomes. Tipple and Korboe (1998) focus on housing transformations in Ghana but limit their scope to policy-built units, neglecting fully informal settlements. A deeper engagement with urban political ecology could bridge this gap, exploring how residents negotiate land, resources, and power in shaping their built environments.

Incremental Housing: Process Over Product

The incremental nature of self-help housing is a dominant area in Self-help housing, particularly in Turner (1976), Tipple and Korboe (1998), and Olajide (2018). Turner's concept of incremental housing, where dwellings evolve gradually in response to household needs, challenges static notions of housing as a finished commodity. Tipple and Korboe's study of housing transformations in Ghana reinforces this, showing how residents modify structures for compound living, income generation, or family expansion. These adaptations are pragmatic, not aesthetic, reflecting lived realities rather than imposed designs.

However, the literature tends to focus on quantitative expansion (adding rooms, extending structures) rather than the social processes driving incrementalism. How do gender dynamics, intergenerational living, or economic precarity shape housing modifications? Moreover, while Turner's work is groundbreaking, his framework under-theorizes place-specific constraints—how ecological, political, or cultural contexts enable or hinder incremental building. Future research could explore how incremental housing interacts with land tenure insecurity, climate vulnerability, or urbanization pressures. These works collectively affirm that self-help housing is not a deficit but a resilient, adaptive practice. Yet key gaps remain:

1. Local knowledge needs deeper architectural and material analysis.
2. Neighborhood ecology should be explicitly theorized, linking social and environmental dynamics to spatial outcomes.
3. Incremental housing research must move beyond form to explore the socio-political and ecological forces shaping it.

Further research agenda have to integrate ethnographic, ecological, and architectural lenses to examine how informal settlements are lived, built, and negotiated in real time. By doing so, scholars can better articulate alternatives to top-down housing policies, centering the expertise of those who know urban informality best, its residents.

Methodology

Research Setting: Oghede Community, Benin City

Oghede is a peri-urban settlement located along the Benin-Lagos highway in Ovia North-East Local Government Area, Edo State, Nigeria. It lies approximately 12 kilometres

northwest of Benin City's urban core and has witnessed rapid population influx due to urban sprawl and land affordability. The community is characterized by semi-rural land use, customary land tenure, and self-built housing patterns. Despite its proximity to major urban nodes, *Oghede* lacks basic urban infrastructure. There are no piped water systems, waste disposal infrastructure, or formal drainage networks. Electricity is erratic and often sourced through community-organized transformers. Roads are largely unpaved, and access becomes challenging during the rainy season. Land is typically acquired through family inheritance or informal purchase, and housing is predominantly incremental, self-financed, and constructed by local artisans. This setting offers an ideal context to explore how local knowledge systems and neighbourhood ecologies inform incremental housing practices in a space where formal planning mechanisms are largely absent.

Philosophical Orientation

The study adopts a constructivist epistemology, which holds that knowledge is co-produced through social interaction and context. This orientation allows the researcher to explore how residents make sense of their housing processes, and how meaning, adaptation, and knowledge flow within the neighbourhood ecosystem. This approach is suitable for capturing deeply embedded, situated knowledge often excluded from formal housing analysis.

Research Design

A qualitative case study design is employed to enable an in-depth, contextual exploration of housing production in Oghede. The case study approach allows for a rich description of real-life phenomena; such as how homes are built incrementally using neighborhood resources and local knowledge, within their natural setting (Yin, 2018). The case study focuses on both the process and logic behind housing decisions, not just their outcomes.

Data Collection Methods

To investigate the research objectives, three primary qualitative methods are used. In-depth Interviews are administered on 15 respondents including home-builders, artisans (e.g., bricklayers, carpenters), elders, and local suppliers. The focus is on decision-making around housing design, use of materials, incremental planning, environmental adaptations, and social collaboration. The tool here is a semi-structured interview guide, allowing for flexibility and probing around local knowledge and ecological decision-making. Two FGDs were also conducted; one with male builders and another with women (wives of builders and female-headed households). The focus is on the community perspectives on neighborhood cooperation, environmental constraints, access to materials, and informal building norms. The researcher also walked through selected

housing clusters with residents to observe housing form, drainage, spatial layout, and reused materials. Field notes and photography were used to document adaptive features and architectural improvisations.

Sampling Strategy

A purposive sampling strategy was adopted to select participants who are actively involved in or have experience with incremental home construction in Oghede. Key selection criteria included; individuals building or living in self-constructed homes, artisans or local material suppliers operating within the community and residents with long-term tenure (5+ years) for ecological and social insight. Snowball sampling was used to identify additional participants through referrals from initial interviewees.

Data Analysis

Data were analyzed using thematic content analysis, following Braun and Clarke's (2006) six-step approach: Familiarization with data, generating initial codes, searching for themes, reviewing themes, Defining and naming themes and producing the report. NVivo software was used to manage coding. Themes will be organized around the conceptual categories:

1. Local Knowledge (e.g., traditional building wisdom, material improvisation, oral planning systems)
2. Neighbourhood Ecology (e.g., social reciprocity, drainage patterns, communal infrastructure)
3. Incremental Housing Architecture (e.g., building in phases, room addition logic, space optimization)

Triangulation will be achieved by comparing interview data, field observations, and FGD insights.

Ethical Considerations

Informed consent was obtained from all participants. Participants were assured of confidentiality and anonymity. All interviews and FGDs were conducted in the preferred language of respondents (wether in Pidgin, English or Edo)

Validity and Trustworthiness

The study ensures credibility, transferability, dependability, and confirmability through; Member checking (participants reviewing interpretations), thick description of context, peer debriefing with academic colleagues and a reflexive journaling to reduce bias.

Research Findings

Overview of Analytical Process

Data collected from interviews, FGDs, and field observations in Oghede community were analyzed inductively using Grounded Theory Methodology (Charmaz, 2006). Analysis proceeded in three phases:

1. Open Coding: Generating initial codes by examining participants' raw words and descriptions.
2. Axial Coding: Grouping codes into categories and identifying relationships among them.
3. Selective Coding: Integrating and refining core categories into overarching theoretical insights.

Below is a presentation of emergent themes and findings.

Knowledge as Inherited Practice: "That's How We Know to Build"

Open Codes:

"My uncle said not to build close to the slope."

"This is how our fathers laid blocks during the rainy season."

"We use red sand only when mixed with chippings."

Axial Code:

1. Tacit ecological wisdom (e.g., drainage orientation, soil behavior)
2. Oral architectural knowledge
3. Intergenerational transfer of building logic

Finding:

Homebuilding in Oghede is deeply informed by local knowledge passed down orally, not via blueprints or technical guides. Builders rely on environmental memory; such as flood histories, wind directions, and soil response, to make decisions about siting, orientation, and materials. This embodied know-how substitutes for formal engineering expertise.

Housing as Process, Not Product: "We Build When Money Comes"

Open Codes:

"I started in 2019, but it's still not finished."

"When I sell some work, I buy blocks."

"Even now, we live in just two rooms."

Axial Code:

1. Phased construction
2. Budget-contingent building
3. Temporal flexibility

Finding:
Housing construction in Oghede follows a phased, incremental logic that aligns with residents' fluctuating incomes. Construction is paused, resumed, or redesigned based on available funds or materials, rather than formal project timelines. Houses are therefore in perpetual becoming, reflecting livelihood rhythms.

Neighborhood as Builder: "We Help Each Other"
Open Codes:
"My neighbour gave me leftover rods."
"We did the roofing together."
"I got the blocks on credit from Mama Alero."
Axial Code:

1. Resource pooling and labor reciprocity
2. Informal credit arrangements
3. Social networks as construction enablers

Finding:
The ecology of the neighborhood; through kinship, friendships, and mutual aid, serves as a productive force in housing construction. From borrowing tools to sourcing materials on trust, residents build within a dense mesh of social exchange that makes up for institutional absences.

Adaptation to Environmental Realities: "If You Don't Raise the Foundation, Rain Will Carry You"
Open Codes:
"We put stones under the foundation."
"I made a trench around the house for water to pass."
"The latrine is far because of the pit."
Axial Code:

1. Water management strategies
2. Site-specific building adjustments
3. Local climate responsiveness

Finding:
Residents demonstrate high environmental literacy in adapting building methods to suit local terrain. Foundations are elevated, soak-aways manually constructed, and buildings adjusted to avoid erosion and waterlogging, revealing an intimate, experimental relationship with the landscape.

Hybrid Material Culture: "We Mix the Old with the New"

Open Codes:

"I bought some zinc, reused the rest."

"Windows from the old church."

"We used mud inside, block outside."

Axial Code:

1. Material improvisation
2. Blending modern and traditional methods
3. Recycling and re-use

Finding:

Material choices are guided not just by cost but also by functionality, availability, and community norms. Builders combine conventional (cement, zinc) and vernacular (mud, wood) materials, revealing a hybrid architecture that responds to practical realities rather than aesthetic ideals.

Naming and Symbolism in Architecture: "This is Efe Villa"

Open Codes:

"We named it Villa after our dream."

"There is meaning in every carving."

"Even if it's small, it's ours."

Axial Code:

1. Symbolic claiming of space
2. Emotional investment in built form
3. Local cultural meaning embedded in design

Finding:

Homes are named, inscribed, and decorated with pride, demonstrating that even unfinished or modest structures carry symbolic value and identity. These houses are more than shelters—they are material manifestations of aspiration, family history, and status.

Emerging Core Theory

Incremental housing in Oghede is a collective, knowledge-driven, and ecologically responsive process that is not only shaped by material constraint, but by a system of indigenous logic, social reciprocity, and environmental adaptation." This core category synthesizes the findings into a theoretical explanation grounded in participant realities. It counters the dominant view of informal housing as chaotic or substandard, showing instead that housing in Oghede is rational, place-based, and socially embedded.

Discussion of Findings

This study sought to explore the influence of local knowledge and neighbourhood ecology on incremental housing architecture in Oghede community, Benin City. Through grounded analysis of narratives, field observations, and focus group data, several interrelated insights emerged that challenge dominant framings of informal housing as disorderly or technically deficient. Instead, the findings affirm that self-help housing in Oghede is a knowledge-rich, ecologically responsive, and socially embedded practice, shaped by community logic and environmental adaptation. The study found that housing in Oghede is constructed through tacit, intergenerational knowledge systems; transmitted orally, through observation, and by apprenticeship. Participants routinely referenced advice from elders, memory of past floods, and soil behavior as guiding influences in siting and design decisions. This resonates with Agrawal's (1995) argument that indigenous knowledge systems offer practical, situated insights often ignored by formal planning. Similarly, Turner (1976) emphasized that housing must be understood as a verb, not a noun, an ongoing practice driven by experiential logic rather than professional expertise. However, where Turner primarily focused on autonomy and user control, this study goes further by showing that technical knowledge in Oghede is also environmentally attuned. For example, foundation heights are deliberately elevated based on seasonal flood knowledge, and trenching is used for makeshift drainage. These practices constitute what this study refers to as spatial literacy, a form of knowing shaped by both memory and land.

Findings also reaffirm the literature on incremental housing as a dynamic, processual mode of construction (Tipple & Korboe, 1998; Olajide, 2018). Participants in Oghede often build their homes in stages, pausing construction during periods of low income and resuming as resources become available. The physical incompleteness of homes, such as unfinished blocks, unpainted walls, or roofed rooms amid unroofed structures, is not a sign of failure, but an expression of adaptive planning. As one participant noted, "We build when money comes." Unlike formal housing approaches that assume linear project delivery, the Oghede experience reflects a temporal elasticity, where homes are simultaneously lived in and under construction. This echoes Habraken's (1998) call for housing systems that recognize user-led transformation over time, and reveals how incrementalism is intimately tied to daily survival strategies in informal economies.

A major contribution of this study is the foregrounding of neighborhood ecology, understood as the interplay between environmental features, social networks, and economic practices within a specific locale. While Kombe and Kreibich (2000) and Gough (1999) reference informal networks and community cooperation, this study identifies the specific mechanisms through which neighborhood ecology sustains housing construction. For instance, many homes in Oghede are built through resource sharing,

such as borrowing tools, using surplus materials from neighbors, or accessing credit through trust-based transactions. In some cases, roofing is carried out communally, or material suppliers offer instalment payment systems based on long-standing personal relationships. These forms of reciprocity represent a hidden infrastructure of social capital, which compensates for the absence of formal institutions. Environmental awareness also emerges as a component of this ecology. Builders avoid waterlogged plots, adjust their layouts to minimize erosion, and construct with materials adapted to local weather conditions. Thus, neighbourhood ecology is not just social; it is social-ecological, offering a more holistic way of understanding housing production beyond conventional economic or policy lenses.

Another important insight relates to material hybridity. Many homes in Oghede combine modern materials (cement blocks, roofing sheets) with reused or traditional ones (mud, wooden scaffolds, salvaged windows). This reflects not only economic necessity but also a pragmatic logic of reuse and contextual fit. AlSayyad (2004) argued that urban informality produces a parallel logic of spatial production, and this study confirms that housing design in Oghede reflects improvisation, resilience, and experimentation. Yet, unlike the romanticization of informality often found in the literature, the study also reveals constraints: the use of mixed materials sometimes leads to structural vulnerability, and the absence of formal planning can create spatial conflicts.

Conclusion

This study examined how local knowledge and neighbourhood ecology shape the architecture and growth patterns of incremental housing in the peri-urban Oghede community of Benin City. The findings demonstrate that incremental housing is not merely a function of economic constraint or institutional absence; rather, it is a purposeful, knowledge-driven, and socially embedded response to the challenges of urban housing. Residents draw on inherited environmental wisdom, social networks, and hybrid material cultures to create housing that is both adaptable and contextually appropriate. Local knowledge; transmitted through family, community practices, and lived experience, emerged as a central force informing construction techniques, site selection, and environmental adaptation. Likewise, neighbourhood ecology, expressed through reciprocal labor, informal credit systems, and communal resource sharing, provides the social infrastructure that sustains incremental building efforts. Far from chaotic, the housing process in Oghede reflects a nuanced logic of survival, flexibility, and local planning intelligence. The study challenges dominant discourses that portray informal settlements as disordered or deficient and instead positions them as valid sites of knowledge production and urban innovation.

Recommendations

Policy Recognition of Local Knowledge Systems: Urban development policies should formally recognize and integrate the tacit knowledge of residents in housing design, land use, and spatial planning. Participatory planning frameworks that validate indigenous expertise will lead to more sustainable and context-sensitive outcomes.

Support for Incremental Housing Practices: Government housing schemes and NGOs should shift from promoting only complete housing units to supporting incremental construction through micro-finance, land regularization, and technical advisory services tailored to phased building.

Strengthening Community-Based Infrastructure: Investments in basic infrastructure (drainage, roads, waste systems) should be community-led and ecologically informed, ensuring that interventions align with how residents already adapt to their environments.

Training and Certification of Local Artisans: Capacity-building programs should target local builders and material suppliers, offering them training and formal recognition. This can bridge the gap between informal expertise and regulatory frameworks without undermining local practices.

Further Research on Informal Planning Systems: Academic and policy research should explore the planning logics that underlie informal settlements, how communities self-regulate spatial layouts, allocate land, and resolve disputes, to inform a broader rethinking of urban governance in African cities.

Contribution of the Study to Architecture

This study makes several original and significant contributions to the field of Architecture, particularly in the subfields of housing design, vernacular architecture, urban informality, and sustainable development. These contributions can be outlined as follows:

1. Reframing Informal Housing as Architectural Practice

The study challenges the dominant architectural discourse that often views informal settlements as spatially deficient or aesthetically substandard. It presents incremental housing in Oghede not as a problem to be solved but as a deliberate, adaptive design process rooted in experiential logic. By doing so, it validates informal housing as a form of legitimate architectural production, shaped by complex socio-spatial reasoning rather than professional oversight.

2. Integration of Local Knowledge into Architectural Thinking

The research foregrounds local knowledge; including oral traditions, environmental memory, and indigenous construction techniques, as a valuable architectural resource. It reveals how residents use context-specific insights to inform site layout, building orientation, material selection, and flood management. This contribution is crucial in

broadening the architectural canon to include non-formal, culturally embedded design systems, often excluded from architectural education and practice.

3. Reconceptualization of Architecture as Process, Not Product

The study emphasizes that housing in Oghede is built incrementally, reflecting shifting household needs, economic constraints, and ecological factors. This reinforces the idea of architecture as a processual, open-ended practice, challenging conventional design models that assume completed, static forms. It expands architectural thinking toward temporal flexibility, where buildings evolve over time rather than being fixed artifacts.

4. Social Architecture and Communal Design Logics

Architecture here is shown not to be the product of a singular designer but the outcome of collective, neighbourhood-based practices. Through labour reciprocity, shared materials, and communal decision-making, housing emerges as a socially co-produced form. This shifts architectural attention from the individual designer to the social networks and ecologies that make building possible, what can be called social architecture or ecological co-design.

5. Hybrid Material Cultures and Adaptive Design

The study documents how residents blend traditional and modern materials (e.g., mud and cement, reused wood and new zinc) to produce hybrid housing forms that are responsive to climate, cost, and cultural symbolism. This highlights a model of material improvisation and sustainability that contrasts sharply with industrialized construction norms, offering new directions for low-cost, climate-resilient architecture.

6. Contribution to Architectural Pedagogy and Research

By providing a grounded, ethnographic account of how architecture is practiced outside formal frameworks, the study contributes methodologically and epistemologically to architectural research. It advocates for participatory, ethnographic, and ecological methods in architectural inquiry, expanding the methodological toolkit of the discipline beyond drawings and models to include oral histories, lived experiences, and environmental adaptation strategies.

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EDITOR-IN-CHIEF
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