

The Contribution of Nigerian Architects to The Sustainability of The National Built Environment: Analysis

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Abstract: The pace of urbanization is increasing rapidly around the world, reaching a critical point in 2007. Nigeria is one of the nations recognized for its swift urban growth, which is significantly altering its built environment. However, the role of architects in promoting the sustainability of this built environment remains unclear. This study examines urbanization, the built environment, sustainability, and the global emphasis on ensuring every urban development is sustainable. Despite the complex and challenging demands of urbanization, Nigeria, like many other developing countries, faces overwhelming developmental pressures. These pressure seen compass the need for sufficient housing, infrastructure, utilities, and various services. While these challenges may evoke feelings of despair and hopelessness, they also present opportunities for innovative solutions that support a sustainable urban built environment. Consequently, these issues illustrate the sustainable urban paradox faced by architects. The cortical insights suggest that the work of professionals in the built environment, particularly that of architects, must adopt sustainable practices to secure a viable urban built environment for current and future generations. In summary, this study has confirmed the architect's crucial role in fostering a sustainable built environment in Nigeria. Additionally, it has provided insights into the processes that lead to architectural interventions. Lastly, the study highlights the importance of collaborative efforts among design professionals, allied built environment sectors, and policy makers to facilitate the implementation of sustainable practices within Nigeria's urban built environment.

Keywords: Architecture, Built Environment, Nigeria, Sustainability, Urbanization

I. Introduction

Urbanization has been a global phenomenon since the 1800s (Doytsheretal., 2010;Muggah, 2012) and shows no signs of slowing down, leading to a growing urban population as illustrated in Figure1. The shift from rural to urban living world wide has transformed the urban demographic from 13% in the 1900s to approximately 50% by 2010, with the pivotal moment occurring in 2007 (International Federation of Surveyors (FIG)2010). It has also been predicted that by 2050, this global trend of urbanization will rise to 72% (Akunnaya and Adedapo, 2014). Additionally, many urban centers around the globe are experiencing rapid urban growth (Macionis and Parrillo, 2010). Developing nations, particularly in Africa, are reportedly facing the highest rates of urbanization growth at 3% (Mosha,2013), with Nigeria highlighted as a country facing significant rapid urbanization (Atere and Akinwale, 2006). In Nigeria, the principal challenge associated with this swift urbanization is the lack of adequate housing (Ogu and Ogbuozobe, 2011; Allu, 2014), which forms the basis forth is study aimed at identifying necessary sustainable interventions for addressing housing and other infrastructural deficits.

Urbanization is recognized as a dynamic process that exhibits uneven patterns, even within a single country. This is especially true in the areas surrounding the main urban environment of many cities (United Nations Population Fund 2007; Macionis and Parrillo, 2010). Generally, urbanization brings both benefits and challenges. There are two aspects to the urbanization paradox. First, the positive aspects of urbanization encompass economic diversification and social enhancements, but the developmental processes that contribute to these benefits also bring challenges (Shenetal.,2015; Ameenetal.,2015). Second, the environmental issues connected to urbanization consist of waste generation, pollution, overcrowding, and the over exploitation of natural resources Typically, two primary characteristics are noted concerning local environmental challenges: one reflects a sense of despair and hopelessness, while the other presents a chance for innovative responses that could foster a sustainable future at the local level (Mamo,2007; Mosha2013). Consequently, this research highlights various paradoxes of urbanization in relation to the built environment and its sustainability. The focus of this study is on how architects can transform challenges into Creative opportunities through architectural interventions that would sustainably redefine architectural practices within the urban built environment. Nevertheless, a prior inductive study indicated that the implementation of sustainable architectural options and strategies is rare in developing countries (Allu and Ekele, 2015), primarily due to limited awareness among some architects regarding the relationship between design practices and the sustainability of the urban built environment. This study aims to fill the knowledge gap and puts forth several recommendations.

II. Literaturereview

The theoretical discussion in this study is organized into three subsections to emphasize the connections among the keywords. These subsections include: urbanization and the built environment, the built environment in Nigeria and sustainability, and the link between sustainability and urbanization. Further elaboration on these topics can be found in section three, followed by the conclusion and some suggested recommendations.

Urbanization and the Built Environment

The built environment encompasses all structures and created spaces, including natural and artificial green areas, where human activities occur (Scotland's Climate Change Adaptation Framework, 2011; Allu, 2015).

Urbanization refers to a developmental trend where an increasing share of the population transitions from rural regions to cities and their outskirts (Bansal et al., 2015). Rapid urbanization is commonly associated with population expansion, which in turn amplifies the demand for urban infrastructure (Akunnaya & Adedapo, 2014; Cartalis et al., 2016).

This situation has resulted in a significant surge in construction activities within many developing nations, including Nigeria (Arif et al., 2009; Mua'azu, 2011). Moreover, the sustainability of the environment is heavily influenced by the practices within the built environment sector (Allu, 2014; 2015).

This implies that if the operations within the built environment are conducted sustainably, the results of these operations would also be sustainable. Additional research has indicated that the built environment sector plays a crucial role in shaping any policies aimed at fostering environmental sustainability within urban areas (Brandon & Lombardi, 2005; Alkadiri et al., 2012; Allu, 2014).

This significance arises from the direct consequences that the sector's activities have on the future of urban infrastructure. To attain sustainable urban development, initiatives must be sector-based. In this context, UN-Habitat (2016) conducted studies on over 70 urban projects across various countries to identify effective practices for sustainable urban development. Their research indicates that all sustainable practices are more effectively organized through sector-specific initiatives.

The built environment sector has been recognized as having the greatest potential and ability to advance environmental sustainability on a global scale (Alkadiri et al., 2012; Allu, 2014). Given the crucial role played by the built environment sector, best practices in this area are promoted and incentivized in developed nations (Brandon & Lombardi, 2005; UN-Habitat, 2016).

A related study by Shen et al. (2013) asserted that best practices in the urban built environment are only effective when all developments are directed by sustainable actions and strategies. Their research also proposed three foundational elements necessary to guarantee sustainability in the urban built environment and to address infrastructural demands in urban centers:

1. Recognizing the current practices
2. Classifying the types of practices
3. Evaluating the outcomes of best practices within the sector

A more recent study by Tan et al. (2017) confirmed and further supported the earlier findings of Shen et al. (2013). Tan's research also identified existing practices within the urban built environment and categorized these practices into 25 activities. Architecture and urban design were identified as the leading category because they possess the highest potential to foster best practices and drive the sustainable global agenda.

Consequently, it is essential for Nigerian architects to ensure that their practices are sustainable in order to reduce urban sustainability paradoxes.

The Built Environment and Sustainability

Nigeria faces significant environmental challenges, which are not unique to the country but are a global concern. Ongoing research efforts worldwide aim to find solutions, with a key focus on sustainable practices, actions, policies, and environmental legislation (Kilbert, 2016; Allu, 2016).

Environmental laws in Nigeria were developed following the post-independence period, primarily to safeguard the environment. However, when examining the universally recognized definition of environmental law provided by UNEP (2012, p.3), shortcomings appear. UNEP states:

"Environmental law is essential for the protection of natural resources and ecosystems and reflects our best hope for the future."

This definition seems to imply that the built environment is either overlooked or only indirectly referenced. This perceived exclusion may have led to the unsustainable practices observed among professionals in the built environment.

This might explain Larenwaju's (2012) assertion that the urban built environment in Nigeria is rapidly deteriorating. Furthermore, the principles of environmental law established to guide environmental activities have not explicitly highlighted the crucial role of practices within the built environment.

Ogbonna and Allu (2010) also noted that the Nigerian landscape is significantly influenced by the actions of the built environment sector. Subsequent studies have recognized that the construction industry in Nigeria remains highly active (Mua'azu, 2011; Allu, 2014).

These perspectives imply that professionals in the built environment—particularly architects, who predominantly initiate development processes in Nigeria's built environment sector—are engaged. Nevertheless, the urban built environment in Nigeria is far from achieving sustainability.

Sustainability and Urbanization

A sustainable urban setting results from effective sustainable practices. Conversely, the effects of urbanization present significant challenges to the urban environment.

This connection has been recognized by Cartalis et al. (2016), who stated:

“Urbanisation and environmental impacts is one of the key drivers of change that challenges the sustainability and resilience of urban environments globally.”

Thus, addressing the urban paradox requires integrated sustainable solutions.

Other research has also underscored the relationship between sustainability and urbanization. Alan (2009) and Roetzel et al. (2017) determined that achieving a balanced urban complex necessitates both sustainable knowledge and the capability to apply that knowledge to buildings and urban infrastructures comprehensively.

However, the practical application of such knowledge remains uncertain in many developing nations (Emuzie, 2013). The conclusion drawn from these studies is that possessing knowledge is insufficient—it is also vital to have the capacity and skill to implement that knowledge effectively.

Moreover, all efforts aimed at creating a sustainable urban environment focus on equity, ensuring that each generation has an equal share of environmental resources (Zia, 2013).

Consequently, every dimension of addressing the challenges associated with urbanization must be approached sustainably. Achieving sustainable urban development must involve implementing best practices by professionals in the built environment sector, particularly in architectural practice.

Cheshmehzangi and Deng (2016), in their research on optimizing the complexities of urbanization, emphasized the need for architects to work alongside other professionals in the built environment. This collaboration would enhance the holistic and effective application of the architect’s responsive design creativity to meet the demands posed by urbanization.

III. Discussions

Exploring the connections between urbanization, sustainability, the built environment, and the role of architects

This research presents arguments from multiple scholars to emphasize the connections between urbanization, sustainability, and the built environment. The theoretical discussions highlighted both general challenges associated with urbanization and those faced specifically by architects.

An additional perspective on the urbanization paradox focuses on promoting sustainability in urban built environments. Three steps were identified to recognize activities that can enhance the processes leading to best practices in the built environment sector.

The study further revealed that architecture and urban design have the greatest potential to transform architectural practices sustainably, ensuring the sustainability of the built environment.

Based on findings from Tan et al. (2017), architects play a crucial role in fostering sustainability. This suggests that the responsibility for achieving sustainable urbanization lies with architects, who must integrate sustainable options into their professional practices to address urbanization challenges.

To implement sustainable best practices, architects must:

1. Be well-versed in the principles of the global sustainable agenda.
2. Possess the capacity to implement sustainable interventions based on this knowledge.
3. Identify best practices within their profession to determine which holistic sustainable practices are relevant to Nigeria’s urban built environment.

Cheshmehzangi and Deng (2016) further concluded that collaborative strategies foster creative design solutions and their implementation. Thus, Nigerian architects must embrace this challenge and lead other professionals to develop holistic design initiatives that advance urban sustainability.

IV. Conclusion and Recommendations

This research reviewed urbanization, the built environment, and sustainability. It identified their connections and highlighted that sector-specific sustainable initiatives are effective for promoting best practices.

The study concluded that to tackle urbanization complexities, the role of architects and urban design is crucial in realizing sustainable urbanization. Nigerian architects, in collaboration with other professionals and stakeholders, must create holistic urban design solutions.

V. Recommendations

1. The Nigerian Institute of Architects (NIA) and the Architects Registration Council of Nigeria (ARCON) should restructure architectural practice to promote sustainability through education, retraining, and awareness.
2. Pursue sector-focused initiatives and research to achieve sustainability in Nigeria's urban built environment.
3. Encourage collaboration among professions, experts, and policymakers to ensure effective implementation of sustainable practices.
4. Implement national best-practice interventions tailored to Nigeria's urbanization challenges.
5. Document successful examples of sustainable practices as case studies to guide future projects.
6. Conduct future research using inductive methods to evaluate architects' knowledge and ability to implement sustainability strategies.

References

1. Allen, A. (2009). Sustainable Cities or Sustainable Urbanisation? *Journal of Sustainable Cities*. [Online] Available: www.ucl.ac.uk/sustainablecities. Accessed 08/02/2017.
2. Allu, E. L. A. (2014). Climate Change and Buildings in Nigeria: A Search for Mitigation and Adaptation Framework for Residential Design Guide. PhD Thesis, De Montfort University, Leicester-UK. [Online] Available: <https://www.dora.dmu.ac.uk/browse?type=author&value=Allu,%20Evelyn>
3. Allu, E. L. A. (2015). Built Environment Professionals' Perceptions of Sustainable Urban Built Environment and the Way Forward for Nigeria. *Journal of Arts and Sciences*, 8(8), 1–8.
4. Allu, E. L. A. (2016). Environmental Justice and Sustainability: Evaluating the Built Environment Professional Practices in the Nigerian Context. *Proceedings of The European Conferences on Sustainability, Energy, and the Environment*, The Waterfront Hotel, Brighton, UK, July 7–10, 2016, 11–20.
5. Allu, E. L. A., & Ebohon, O. J. (2015). Assessing the Knowledge and Awareness Level of Built Environment Professionals in Nigeria. *International Journal of Contemporary Applied Sciences*, 2(5), 77–95.
6. Allu, E. L. A., & Ekele, T. O. (2015). Sustainable Urban Built Environment for Nigeria: A Framework Approach. *International Journal of Contemporary Applied Science*, 2(5), 96–107. [Online] Available: www.ijcas.net
7. Allu, E. L. A., Ebohon, O. J., & Taki, A. H. (2013). Architectural Design: Its Roles on Buildings for Sustainable Development. *International Postgraduate Research Conference*, April 8–10, Salford-UK, 92–104.
8. Arif, M., Egbu, C., Haleem, A., Ebohon, J., & Khalfan, M. (2009). Green Construction in India: Gaining a Deeper Understanding. *ASCE Journal of Architectural Engineering*, 15(1), 10–13.
9. Bansal, N., Shrivastava, V., & Singh, J. (2015). Smart Urbanization – Key to Sustainable Cities. *Proceedings REALCORP 2015*, 5–7 May, Ghent, Belgium. [Online] Available: www.corp.at. Accessed 12/02/2017.
10. Brandon, P. S., & Lombardi, P. (2005). Evaluating Sustainable Development in the Built Environment. [Online] Available: www.thatconstructionsite.com. Accessed 09/07/2016.
11. Cartalis, C. (2014). Towards Resilient Cities – A Review of Definitions, Challenges and Prospects. *Advances in Building Energy Research*, 8, 259–266.
12. Cartalis, C., Santamouris, M., Nyktarakis, G., Polydoros, A., & Mavroukou, T. (2016). Assessing the Interlinks between Urbanization, the Built Environment and the Thermal Environment in view of Smart and Sustainable Urban Development: A Demonstration Application for Athens. *International Journal of Earth & Environmental Science*, 1, 107. doi: <http://dx.doi.org/10.15344/ijeers/2016/107>
13. Cherenet Mamo, Zegeye (2015). Designing the 'Informal': Spatial Design Strategies for the Emerging Urbanization around Water Bodies in Ethiopia. PhD Thesis, HafenCity University, Hamburg. [Online] Available: <http://edoc.sub.uni-hamburg.de/hcu/volltexte/2015/249/>. Accessed 20/02/2017.
14. Cheshmehzangi, A., & Deng, W. (2016). Optimizing the Complex Urban: The Case of Sustainability and the Built Environment for the Eco-Cities in China. *Journal of Advanced Management Science*, 4(2), 127–132.
15. Doytsher, Y., Kelly, P., & Khouri, R. (2010). Rapid Urbanization and Mega Cities: The Need for Spatial Information Management. In C. Potsiou (Ed.), *FIG Research Study No. 48*. [Online] Available: www.fig.net/pub/fig2010/papers/ts01b/ts01b_potsiou_doytsher_et_al_4709.pdf. Accessed 23/01/2016.
16. Ebohon, O. J., Taki, A. H., & Allu, E. L. A. (2013). Sustainable Agenda: Challenges of Mitigation and Adaptation in the Nigerian Built Environment. *Proceedings of the Architects Registration Council of Nigeria (ARCON) 6th Architects Colloquium*, April 22–25, Abuja-Nigeria, 150–170.
17. Falconer, G., & Mitchell, S. (2012). Smart City Framework: A Systematic Process for Enabling Connected Communities. [Online] Available: scholar.google.com.
18. International Federation of Surveyors (FIG) (2010). Report 48, Rapid Urbanization and Mega Cities: The Need for Spatial Information Management. [Online] Available: www.fig.net. Accessed 21/02/2017.
19. International Journal of Contemporary Applied Researches (2017). Vol. 4, No. 6, June 2017.