

Applications of Minimalism and Culture for the Development of Affordable Housing in Nigeria

¹Ebelechukwu Obianuju Enwerekowe, ²Rolland Chibueze Josiah,
³Raphael Iyima Eshaleku, ⁴Uju Jennifer Nwakama &
⁵Benjamin Cheng-Dalyop Bott

^{1,2,3,4&5} Department of Architecture,
University of Jos, P.M.B. 2084, Jos, Plateau State, Nigeria

Abstract

This study aims to examine the potentials of applying key features of minimalism and indigenous culture on the development of low cost housing in Nigeria. The use of literature analysis, case studying and summarised reviews of leading published studies and current issues dialogues provided a qualitative assessment of the fusion of minimalistic tenets and cultural concepts on low cost housing developments in local and international contexts. The study identified the use of traditional forms, sustainable materials of construction, reassessment of priorities to cut excesses and the use of multipurpose spaces as essential tools for the design and development of affordable housing needed to offset the deficit in growing urban areas typical in countries like Nigeria. The study thus recommends firstly, the evolution of building construction methods which fuse cultural building orientation, secondly the reduction of excessive building cost and lastly the enlightenment of policy makers, planners of the built environment and regulatory bodies on the need to develop affordable spaces where people in urban areas live and work.

Keywords: *Affordable housing, Culture, minimalism, Urban growth, Sustainability*

Corresponding Author: Ebelechukwu Obianuju Enwerekowe

Background to the Study

Housing is a key player in the social, political and economic dialogue in our society. It is acknowledged as the second most significant human need after nourishment and as expressed by Article 25 of the Universal Declaration of Human Rights, is an essential human right. Yet as fundamental as this need appears, it is not as simple to acquire in every case as different issues influence the powerlessness of man to fulfil this need (UNEP, 2009; Akunnaya and Adedapo, 2014; Obi and Ubani, 2014). Provision of adequate housing depends upon a complex synthesis of cost, culture and climate in order to generate workable and comfortable planning and design solutions. Housing inadequacies and affordability which have spared no country – rural or urban – are far-reaching and the deficits are both quantitative and qualitative resulting in large populations still living in indecent, informal housing structures with limited or no access to water, basic amenities and other public infrastructure (Sham, 1993; Zubairu 2004).

Rapid rates of urbanisation across the globe accounts for most of the housing shortfalls experienced in today's society. Although a late entrant into urbanisation, Africa has witnessed a faster rate of urban growth over the last 30 years than most other continents. Nigeria is the most populated country in Africa: over 50% of the population live in urban areas which poses a huge challenge for housing development (Akunnaya and Adedapo, 2014). The social effect of housing shortages on security, overcrowding, evictions and homelessness trigger economic catastrophes such as spiralling rent and house prices which lead to an affordability crisis for those who want to rent or own a home. This fast-growing demographic is made up of a predominantly young population desirous of smaller household sizes and individualism (Hoffower, 2019).

As part of a wider effort to narrow down existing gaps in the affordable housing crisis, this study aims to look at the impact of Minimalism and culture on market oriented solutions to the development of low-cost housing development in Nigeria. While these efforts include wider arrangements such as bringing down the expense of land, low-cost development activities, upgraded mortgage systems, upkeep and improved financing, this study examines if the idea of moderation can help to battle the issue of housing reasonableness. Moderation in this context is an approach to move away from the overabundance around us through the reassessment of needs (minimalism) and the way of life governing those societal needs and wants (culture) found most likely to influence the design of the architectural forms of affordable housing (Ndubueze, 2009; Enisan and Ogundiran, 2013).

Thus, the study attempts to establish a richer understanding of the minimalist theory and its applications in architecture whilst highlighting the various architectural approaches (such as the importance of space efficiency and functionality) to tackling the housing affordability crisis. Through a critical examination of minimalistic and cultural trends in local and international housing development, the study seeks to address concerns for viable housing delivery in Nigeria where suitable housing shortages still persist.

Literature Review: Minimalism, Culture and Architecture

Minimalism is a buzzword that is often misunderstood. Contrary to popular misconception, it is not restricted to sparse or frugal living akin to homelessness or poverty. Rather, minimalism is a means to avoiding excesses through the reassessment of priorities and colloquially refers to anything that is spare or stripped to its essential quality (Mayor, 2009, p. 1111). The minimalist approach favours a reflection on what is really essential in a bid to reduce clutter – whether physical or even spiritual. Despite its appearance as a simple principle, achieving excellence in the minimalist style requires great skill to execute to perfection and maximum effect using the fewest elements (Senturer and Istek, 2000). Minimalism is a concept used not only in architecture but also in art, fashion and other design fields (Shobeiry, 2017) and is widely believed to have made its emergence in the 20th century (Wolf, 2015) thereafter becoming an important part of visual art and design. Minimalism thrives on simplicity in both form and content as well as in personal expressivity.

Culture describes the particular ideas, customs and social behaviour of a group of people or society. Simply put: it is a way of life, a collection of values, a system or complex of distinctive attainments and traditions belonging to a particular society (Kenney, 1994). Kenney further identified 3 (three) conditions which were essential to the survival and growth of culture being: firstly an organic structure which enables the relay of previous traditions down to younger generations; secondly a geographical context for the use of available resources, local building materials and technology, natural surroundings and terrain; and thirdly a balance of unity and diversity in religion. Language is also a key component in culture since members depend upon their ability to communicate with each other (Zare and Kazemian, 2014). Some values extend beyond the realm of cultural boundaries and extend into the realms of universal values for humankind some of which include the fundamental need to survive and avoidance of pain and suffering.

Architecture is a manifestation and expression of culture which responds to the social needs and values of the society in which it interacts. Rapoport (1969) suggested 5 (five) aspects of culture most likely to influence architectural form, namely; the way basic needs are fulfilled, family structure and hierarchy, the varied role of women in society, attitudes towards privacy, and social interaction (Uji, 1992). The influence of culture on minimalistic African traditional dwellings for example, typically features in the layout and composition of multipurpose spaces that may be circular, rectilinear or a blend of the two. Thus, minimalism becomes a pivotal influencer of architectural form and function as it tends to fulfil basic needs in a manner that inclines towards basic essential quality and aesthetic simplicity. However the goal of a minimalist approach in architecture is not to be sterile, boring, small and compact but to reduce buildings down to their most basic form, function and essence (Nikolić and Vasilski, 2017).

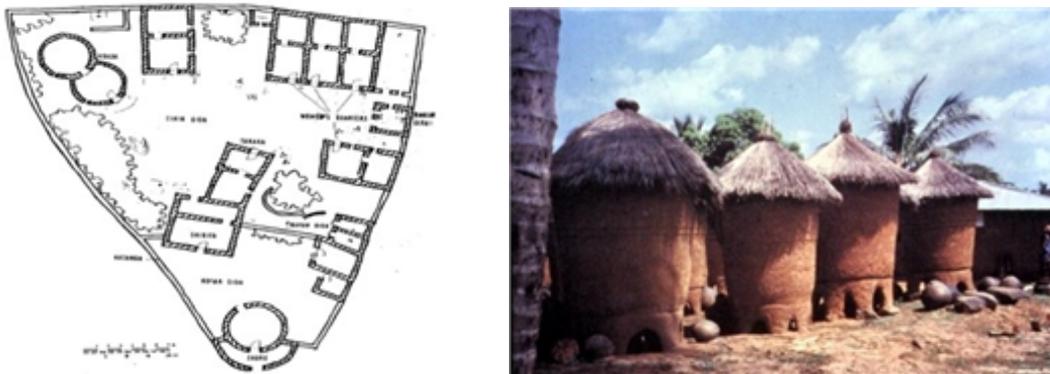


Figure 1 (L-R): Traditional African homestead layout featuring circular storage silos, rectilinear living spaces arranged to encourage both privacy and communal activities. (Source: Rowan, 1981; Uji, 1992).

The Minimalist Movement in architecture finds its roots in the principle of the “less is more” theory held by the Cubism-derived movements known as De Stijl and Bauhaus advocated by the likes of Ludwig Mies van der Rohe, Theo van Doesburg and Gerrit Rietveld (Zimmerman, 2009). The application of this principle seeks to create alternative, multifaceted solutions for decent living and working spaces that incorporate sustainable features which reduce the cost of building construction and maintenance. The movement utilises geometric forms to create simple building arrangements, open floor plans, minimal interior walls, modest storage areas, and an emphasis on views and daylight.

For housing purposes, minimalist designs shun redundant spaces: extra features such as formal sitting spaces, dining rooms, libraries, laundry rooms, dens and walk-in closets do not exist or are not demarcated where they do. The preference of the minimalist style of housing design in recent years by young people born from 1981-1996 popularly called “Millennials” has led to the development of several adaptations of the movement (Geoffrey, 2018; Hoffower, 2019). Though the general characteristics of millennials vary by region, social and economic conditions, and by individual, they are commonly marked by their coming of age in the Information Age and are very comfortable in their use of digital technology and social media (Van Dam, 2019). Minimalist housing provides millennials the opportunity to own affordable accommodation which creates more exciting living experiences brought about by their largely nomadic lifestyles or remote working conditions in a variety of fixed, semi-fixed or movable housing designs (Arcilla, 2015; Aouf, 2016).

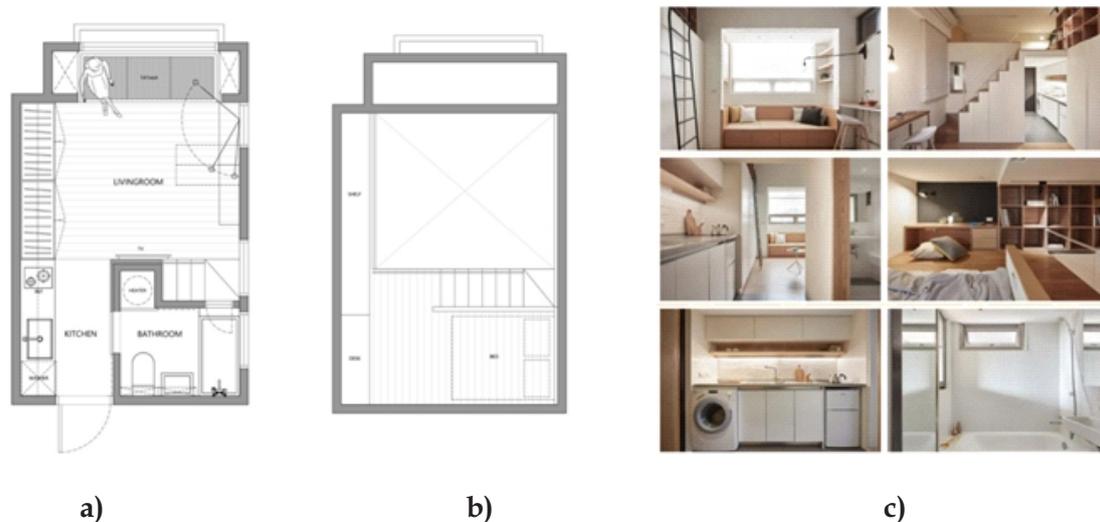


Figure 2: a) Ground floor (left);
 b) First floor (right) plans
 c) Views of sitting area, stairs, bedroom, bathroom, kitchen and galley entry (clockwise from top left) of a fixed minimalist house in Taiwan

Source: Aouf, 2016.

A growing body of research views the development of minimalist housing solutions as a viable architectural response to the pressures of expanding populations and urban growth on housing markets (Agbola and Agunbiade, 2009; Enisan and Ogundiran, 2013; Akunnaya and Adedapo, 2014; Obi and Ubani, 2014; Nikolić and Vasilski, 2017). Furthermore, minimalist housing potentially provides solutions which reconsider conventional forms of housing with low cost schemes that reduce the cost of construction through design considerations, use of locally available materials, and improved skill and technology without compromising the strength, performance and lifespan of the structure (Aouf, 2016; Hoffower, 2019). However, minimalism and culture play conflicting roles in the Nigerian built environment. Severe affordable housing shortages which could be addressed through minimalistic approaches to design are countered by the lingering culture of acquisition of land and large property, both of which are perceived to depict a higher status in modern Nigerian society (Raphael, 2019). Recent studies have presented the influence of culture and minimalism on affordable housing development and this assessment is made based on the observation of exemplary samples in contemporary design.

Methodology

This study aims at examining the potential influence of minimalism and culture on the provision of affordable housing in Nigeria. The analysis of the study addressed the individual and collective roles of the architect and architecture on re-jigging the current situation through proper design and site planning guided by tried and tested principles. This section describes the methodology or general research strategy that outlines the way

in which the research was undertaken and among other things, identifies the methods to be used in it. The method used for data gathering was case study, selected with a view to examining in great depth the principles being reviewed: in this case 3 (three) minimalist designs of local and international origin juxtaposed against cultural requirements which each configure said design principles to local conditions. Data gathering strategies include content or documentary analysis, participant observation and archival research. The advantages of this method include data collection and analysis within the context of the phenomenon, integration of qualitative and quantitative data in data analysis and the ability to capture complexities of real-life situations so that the phenomenon can be studied in greater detail (Dudovskiy, 2018).

The case studies under review were selected through purposive sampling that is a non-probability sampling technique based on the characteristics of the projects due to the limited availability of design schemes which could serve as primary data sources within the delimitations and objectives of the study (Crossman, 2017). Through the use of documental research and theoretical observation, the case study findings are presented and analysed using photographs, narratives and descriptive interpretation.

Data Presentation and Discussion of Findings

This section of the study presents a comprehensive analysis of the case study report and its implications on the study aim. Subsequently, this section discusses how minimalism and culture have influenced the design of several important examples of architecture and may continue to shape the development of sustainable and reasonable contextual housing.

1. Katayama Apartments, Katayama-Cho, Osaka, Japan (2007)

Many cultures draw influence from aesthetic simplicity however minimalism draws its greatest influence from the Zen philosophy of Japan. The Japanese value of “*wabi-sabi*” finds value in the simple forms of the innate beauty found in nature. Traditional Japanese dwellings typically create a connection between internal and external spaces by movable screens used to demarcate multifunctional spaces. The principle of “*ma*” or emptiness utilises open spaces as motivation that compels contemplation of essential form. The principle of “*sejiku*” or stillness translates the state achieved by meditation into a design feature which enhances tranquillity, harmony and balance. Architect Matsunami Mitsutomo incorporated these design principles into the 7-story apartment block on a diminutive 110m² site which houses 10 distinct minimalist-style apartments. The design navigated the difficulties of a severely limited building space and strict budget in a bid to create living environments that are traditionally multifunctional and practical.

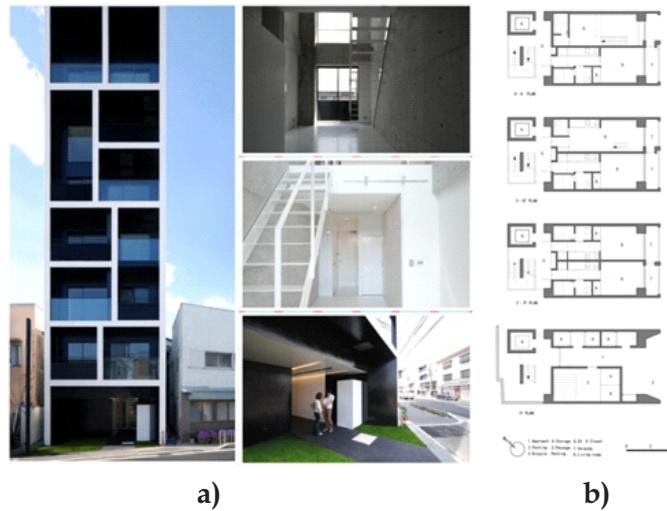


Figure 3: a) Clockwise from left – façade, main entrance hall, apartment vestibule and street level entrance;
 b) Typical floor plans of Katayama Apartments, Osaka.
 (Source: Archdaily.com)

The building is finished in a modern black and white paint finish to contrast the grey, beige and brick homogeneous façades of the Katayama district. The influence of Japanese Zen culture and minimalism do not supersede standard design practice as the strategic placement of balconies on the individual floor plans afford unhindered emergency evacuations if needed and the building complies with local building height restrictions. By means of thoughtful design, Katayama Apartments provides highly sought-after spaces that offer both diversity and economic efficiency which have had no vacancies since the project was completed in 2007.

2. Carmen House, Algemesí, Spain (2018)

Spanish architecture has a long history from the pre-Romanesque style to the Colonial and on to the 20th century “Spanish Revival” style which is not defined by strict rules of style but by an eclectic aesthetic or feeling. Spanish Revival buildings tend to feature traditionally stucco exterior walls and low-pitched, sometimes flat, roofs covered in red tiles. The design of the 2018 Ibiza-style country house by Spanish architects Carles Faus Arquitectura just outside the city of Dénia is located in an environment where accents are placed only on the inside to avoid having to divert attention from the existing traditional-style buildings that surround it.

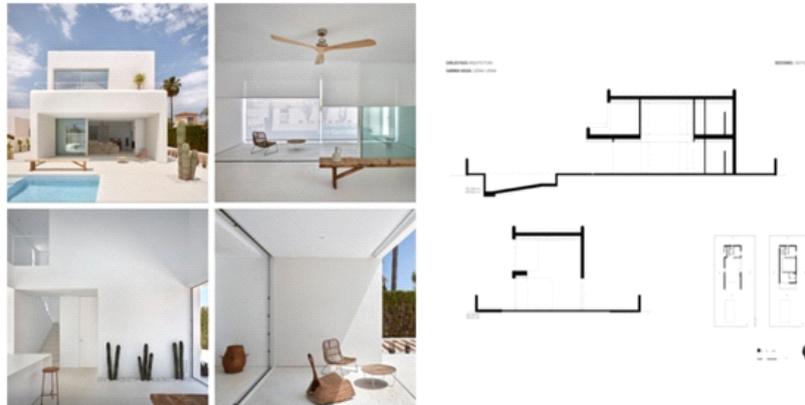


Figure 4: a) Façade, main living space, porch and kitchen;
 b) Sketch sections and plans of Carmen House, Algemesi, Spain.
 (Source: Archdaily, 2018)

The location of interior space is defined by a pathway of daylight which proceeds from a large entryway overlooking the pool in the foreground. The entryway serves dual functions by also mitigating the entry of sun during the hottest months of the year making it comfortable to use the space all year round. The simple rectilinear main floor plans are open, multifunctional, double-height spaces which break the exterior continuity and the building access has been generated through a side access located on the north façade. The building is painted in a stark white finish which is almost indigenous to the Spanish setting and even black shadows seem slightly faded against the white background. The entire construction comprises micro-cement which is less liable to wear and tear and requires nothing more than a touch up of paint every couple of years. The influence of minimalism on the design can be seen in the crisp lines defining the few boundaries between spaces, simplicity in both form and function, uncomplicated wall finishes, simple detailing devoid of decoration and strategic use of locally sourced materials, both internally and externally.

3. FolaAgoro road Micro-apartments, IgbobiShomolu, Lagos, Nigeria (2017)

African architecture descends from a traditionally minimalistic view point. Designs are influenced by climates ranging from northern tropical deserts to southern Sahel savannahs which complement their natural terrain. Culture plays a strong role in the layout and configuration of indigenous African architecture from which Nigeria is no exception. Household size and composition, religion, familial ties, communal interaction, social class and climate are some of the key determinants of the homestead layout which exist as plans which are circular, rectilinear or a combination of the two. Traditional Nigerian homesteads are dominated by a centralised courtyard which serves a focal meeting point, animal shelter or even as a cooking space. Living spaces are multifunctional and demarcations (where they exist) utilise furnishing to create distinctive spaces for sleeping, eating and cooking. Minimalism in modern Nigerian architecture though largely conjectural was the theme behind the 2017 proposal for 140

micro apartments in a 7-storey mixed use complex designed by Naomi Ogunderu which appears to successfully fuse traditional elements of multipurpose spaces with communal interaction spaces in an updated, practical design.

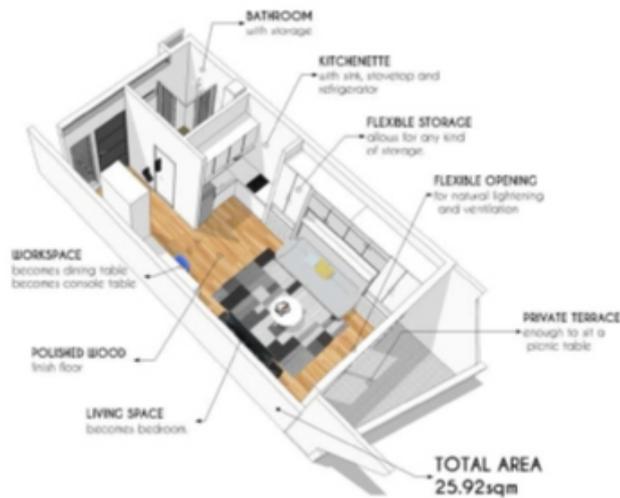


Figure 5: Aerial perspective of standard micro unit apartment on Fola Agoro road. (Source: Ogunderu, 2017).

Each standard micro unit of less than 26m² features a flexible living space, a kitchenette a bathroom and a private terrace best suited for young professionals. Secondary units twice the size appeal to young couples and older move-down singles. Traditional materials such as wood and clay used contemporarily alongside concrete, steel and glass give a sustainable approach to aspects such as ventilation, lighting, aesthetics and structural integrity. The incorporation of retail and recreational spaces into the site layout design pays homage to traditional features in most Nigerian community layouts where spaces like market squares, monarch's palaces and/or adjoining farmlands piece together various homesteads into one homogeneous unit. The major attraction of the micro units is expected to come from the option for younger residents to live in hip locations in otherwise expensive urban cores with lower rent payments or the possibility of early homeownership through leasing plans.



Figure 6: Typical floor plan of standard micro unit apartments on Fola Agoro road. (Source: Ogunderu, 2017)



Figure 7: Perspective view of prototype micro unit apartment block on Fola Agoro road. (Source: Ogunderu, 2017)

Conclusion and Recommendations

Minimalism does not mean the absence of everything in a space. On the contrary, minimalism achieves the essence of a space with an attitude that increases the value of said space thereby replacing the unessential with what is truly important. Cultures are highly complex systems with many qualitative relationships where individual aspects influence the interconnected values on the larger systems. Reviewing the way a culture's basic needs are fulfilled, the hierarchy of the family structure, attitudes about the role of women and privacy, as well as the way a society interacts can aid in deciphering architectural function and form causing design to become more minimalistic. Present day design stands to benefit from this approach through the creation of more informed and appropriate design responses which checkmate cost, climate and culture of the users. Traditional building patterns typically align with the minimalist style of creating

only necessary spaces. The study shows that the evolution of building construction methods over time can successfully be fused with cultural building orientation which is both functional and cost effective for modern day use. Thus the study recommends the adoption of such concepts into the development of low-cost housing schemes which could address the lingering problem of excessive building construction and running costs as well as housing shortages. The study findings are also useful to policy makers, planners of the built environment and regulatory bodies, all of whom are responsible for developing the spaces where people can effectively live and work.

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