# TOWARDS AN ENVIRONMENT FRIENDLY ARCHITECTURE IN NIGERIA: ISSUES AND STRATEGIES

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**Abstract**

Architecture is an abstraction from nature and intuition with possibilities of aesthetic accompaniments for an overall ambient satisfaction. However, many buildings today fall out of this premise, yielding rather to the compelling force of economy, thus changing the cultural intrinsic maxim of "form follows climate" to "form follows purse". This phenomenal development negates orthodox principles and profits of environmental hedonism and management. This paper, thus takes a look at the emerging architectural milieu in Nigeria, highlighting its problems in tropical context and unveiling the factors associated with its prevalence. It advocates a reversal of the trend and sues for a systematic intellectual approach that intrinsically incorporates environmental considerations into design decisions. It opines that this will engender better building performances in all cultures and climates.

## Introduction

Man's need and struggle for shelter dates back to his earliest appearance on the earths' globe. From then, his most formidable and persistent challenge has come from the climate he lives in. This idea is underlined by Kukreja (1978) when he said that, in constructing shelter for himself, man has always had to battle against nature. The design and construction of human dwellings and settlements in any region are influenced, besides other factors, to a great extent, by the climate and physical environment of the region. Thus, Ching (1975) posited that the design and construction of buildings must lake cognizance of the implications of its proposed physical context, the building site, the geographical location, topography, climate, orientation and the peripheral conditions. This is reminiscent of Flank Lloyd Wrights account of the evolution of his design of imperial Hotel in Tokyo (Wright, 1937).

Nigeria, as a developing country, continues to face an unprecedented pace of construction activities in the form of residential, commercial, industrial, office and other specialized buildings particularly in this era of increasing technology and population growth. This phenomenon poses a tremendous challenge to architects and planners. The Nigerian building landscape today presents architecture of various classes and buildings of varying degrees of comfort and climatic compatibility. The unpleasant levels of comfort in most of the buildings holds out architectural profession in suspicion before the society that it is serving. This calls for caution, appraisal and a recourse to the fundamental essence of architecture which is to modify the physical climate so that certain activities can be carried out conveniently and in comfort. Broadbcnl (1973) thus reasoned that if techniques are available which have enabled man to survive on the sea-bed, or on the surface of the moon by modifying their otherwise hostile climates, then clearly the architect will be acting irresponsibly if he refuses to apply them to the relatively simpler but still unsolved problems of modifying the climate on the earth's surface.

Ajibola and Adunola (2002) observed that there have been generalizations in the design and construction of buildings in the country without regard to the differences in the local climate. Most building evaluation focused on the optimal use of space and cost effectiveness, relegating physiological issues such as thermal comfort to the background. They bemoaned that many Nigerian buildings are with poorly designed fenestrations. For such buildings, they opined that heat gained through the fenestrations could be excruciating, rendering indoor spaces uncomfortable. Ogunsote and Prucnal - Ogunsote (2002) pointed out that to design with climate has always been a major consideration in architecture thus agreeing with Groat (2000) that any professional field is defined in terms of the implicit and explicit values embedded in its practice.

While these published works and many others outlined useful theoretical framework and provided a manual for environmentally conducive building designs in the tropics (Nigeria in particular), the very practical and operational matters relating to the startling number of non-



environmentally friendly structures across Nigerian borders remain unearthed. This is the focus of this paper. In doing so, the paper provides a background of traditional concept of building design against contemporary practice in Nigeria and highlights basic problems precipitating the persistence of the un-orthodox practice, thus opening up grounds for useful suggestions towards practical resolution of the development**.**

## Evolutions anti Concept of Building Design

The concept and practice of building has been a cultural part of mankind, predating the establishment of schools of learning. The pre-hisloric man contended with it as he had to organize his physical environment to meet his needs of shelter (Olotuah, 2001). Thus, man's first house was determined by his intention to get sheltered from inclement weather and other

dangerous conditions of his environment (Fadamiro and Ogunsemi, 1996). His search for shelter went on for hundreds and thousands of years in every part of the ancient world. The type of protection he needed varied with time and place, the natural caves and tree tops offering themselves as man's earliest forms of shelter for centuries.

With time and depending on where he lived, man had snow, mud, leaves, stones and other materials for his house construction, like the Eskimos used snow to make IGLOOS. Consequently, man turned his hands to making his own habitation on the ground and well realized that any habitation must shelter him against inclemencies of weather, and create an environment conducive to well-being and efficiency (Neufort, 1970). The product of this effort varied across the globe and as man advanced in technology. Such factors as climate, nature of soil, available construction materials and topography exercised modifying effects on the emerging habitations which were products of the march between the climate to be controlled and the resources available for its control.

Sequel to man's progressive advancement, the concept of building simultaneously developed, extending beyond mere shelter to encompass the interior spaces together with the services and environment that facilitate and enhance good living. Other factors that later tend to widen this concept have to do with vocal expression or language of the structure which is dictated by sociocultural, political and economic motives.

### Design Goal

Without prejudice to the reality and centrality of functionality, vocal language and economic- factors, among others, in design considerations, the ultimate and fundamental goal statement underlying the design of buildings is its compatibility with the prevailing climate and the environment. This goal translates to two central concerns. First is that the design, materials and construction appropriate to the specific region and climate must be employed. The other is that the buildings must be conceived not as monuments but as receptacles for the flow of human activities which they accommodate.

Nkwogu (2001) put it succinctly that if our designs for buildings are to be correct, we must at the onset, take note of the countries and climate in which they are built. One style of building, he argued, seems appropriate in Egypt, another in England, a different kind in Nigeria, one still different in Norway and so on with lands and countries oT other regions. This, he explained, is because one path of the earth's surface is directly under the sun's path; another is far away from it while another lies midway between the two. This corroborates earlier postulations of Frank Lloyd Wright that the nature of the site, of the soil, of the climate comes first. Next what materials are available in the circumstances - money being one of them (Wright, 1937).

## Climatic Implications For Building Designs

Climatic implications germane to building design relate primarily to the effective indoor thermal comfort produced in the building, which is a function of temperature, airflow, relative humidity, radiation and surrounding vegetation. For optimal efficiency, therefore, these parameters must be well taken care of in the design process. While variations in climate may be expected across the globe and region, Watson (1982) showed that a wide variation of local climate conditions can also occur as a function of local water bodies, changes in elevation, vegetation and land contours. Thus, Szokolay (1992), opined that the climate of a given location should be analysed on its own terms to generation the appropriate responsive architecture.

General architectural responses find expression in the orientation of the building, the size and location of openings, internal and external shading devices, use of landscaping and choice of appropriate materials. This no doubt, requires the skill of a professional architect in the broad spectrum of the word professional as put forward by Akindoyeni (2002), that a professional is one who has a thorough grasp of the fundamental principles of his skill to the extent that he solves the problems which may emanate from the provision of facilities which the practice of the skill bestows on the community, and can give a good and sufficient account of why the preferred solution is adopted for the problem, without undue injury to the community.

**Grounds For The Prevalence of Environmentally Incompatible Structures**

Arayela (2002) observed that societies generally undergo changes in their cultural experiences. These changes profoundly impinge on the architecture, which he defined as the physical translation of society's cultural values and social organization. Through landmark events in world history, notably the slave trade, world wars, colonization, missionary activities, travels, education, civilization and globalization, the Nigerian ecological setting, culture and architecture, like in many other African countries, seem to have become a blend of Western civilization and the traditional. The emerging composite architectural environment thus presents a building landscape dotted with transplanted architecture that are totally incompatible with, local weather conditions and in conflict with both land and environmental terrain. Akingbohungbe (2002), aptly remarked that our experiences and exposure to western civilization through colonial domination by Britain have changed our values and forced on us a strong affinity for exotic designs, structures and materials from western cultures that our local economy and technology cannot sustain. To us (Nigerians), he said, they epitomize modernism and symbols of an industrial age. Such buildings often require artificial means of cooling for relevance which the country's epileptic power supply, paralytic economy and toddling technology cannot support.

Although architecture evolved from a humble quest for shelter, its requirements have translated into a high technical, socio- cultural and climatic complexities requiring the mobilization of diverse skills and resources for its fulfillment. Behind every building, there are volumes of books that may be written, thus, the design cannot be left in the hands of just a zealous individual. The lamentable spate of uncultured structures across the nation is a proof of the negation of the foregoing reality. It is a trend largely traceable to the increasing activities of quacks in the building design business. These quacks include the popular draughtsman, and the elastic bracket of other unlicensed professionals seeking ready and greener pastures via building designs. The observation of Akindoyeni (ibid) that, in the last ten years, more draughts men have designed more houses than the professionals (Architects) is not only an aberration but also an embarrassment to the Nigerian nation. The combined effects of a number of factors culminate in this development. First is the low level of public education on architecture and architectural practice in the country. The practice of architecture began in Nigeria in the late 1940s when the firm of British architects: Fry Drew and Partners was commissioned to design the University College, Ibadan (Oruwari, 1995). By 1958, the first indigenous Nigerian architectural firm was set up by Olumuyiwa Oluwole while the Nigerian Institute of Architects was born in 1960. As at 1997, the total number of registered architects stood at 1, 448 (Araycla, 2001). Against this background and considering the vast size and population of Nigeria, the low level of public education about the values of the built environment can rightly be appreciated, education is inextricably intertwined with cultural imperatives and the core values of the society.

The Nigerian nation woke up into oil boom in the early 1970's following the discovery and exploitation of oil resources within its borders. The boom reached its peak at about 1975, coinciding with the end of the civil war in the country. Consequently, the nation got into a daring rush for rapid urban and physical transformation to project it into the committee of developed nations as well as for purposes of needed reconstruction and rehabilitation. Added to these were the creation of more states, establishment of more universities, colleges and other public institutions. Resullantly, architectural services came under very great demand. The effects of this manifested in two dimensions. A number of the foreign firms that got the lion-share of design contracts then produced works of foreign cultures that do not meet the socio-cultural and bio-climatic needs of the country. Lamentably loo, some of the few indigenous firms were dominated by foreign trained architects, thus, making their performance not different from their foreign counterparts. The other and perhaps more serious

dimension (as the later proved) is that architects became too busy with public sector contracts to the neglect of private sector jobs. This development estranged them from this vital sector that is responsible for the production of a larger percentage of housing developments across the country. Consequently, architectural craftsmen and other quacks thus look over the services to the large sector, producing "architecture" of the level of their competence. The second is the unfavourable economic climate that continues to nose dive since the global oil glut of the 1980s and made worse by the alarming height of corruption in the country occasioned by military recklessness and misrule. The building sector and of course architecture became evidently worse hit. It reduced the inclination of the community to seek expert inputs in the face of the cheaper quacks' service aside from the obvious reduction in the capital outlay for building projects. It also imposed undue exploitation of limited landed properties and an over emphasis on economy at the expense of human comfort which buildings were meant to provide. Form started to follow purse rather than climate or function. Given these circumstances, quackery in building design became fashionable and thrived exceedingly. The third is the inconsistency and non-enforcement of appropriate statutory professional licensing laws of the country. These are enabling laws stipulating the definition, qualifications, registration, discipline and penalties of professional practice of recognized professions with a view to ensuring the health, safely, welfare and conveniences of the people in and around buildings.

Existing regulation stipulates that there is no building without a plan. The official answer to the pertinent question of who prepares the plain immediately reveals official confusion and lack of commitment to the ideals of architecture. Draughts man, thus, got grafted into the slock of designers without any requirement of a licensed architect's endorsement. This route consequently provides ample way for all other categories of quacks into the design market. Other sharp practices like design duplications found inroad through the same route. The plan approval process in the country's Planning Authorities that is again devoid of professional architects' inputs further aggravates the already cankered situation as approval is given by a professional outside the discipline of architecture and who is not positioned to give proper architectural evaluation of architectural proposals.

## Recommendations

**i)** Buildings and their environments are central to man as they are primary dictators of his wellbeing. As far back as the renaissance epoch, architecture has been recognized as an intellectual disciple rather than merely a craft to be learned in apprenticeship. Current contemporary Nigerian practice, where architectural craftsmen (draughtsmen) and all shades of architectural illiterates become dominant parishioners of the same profession, where masters degree holders in the same do not qualify to practise until after two year pupilage and a pass in qualifying examination, is a contradiction and a tragedy. It is responsible for the prevalence of architecture of replication and non-climate compliance.

**ii)** Architecture, no doubt, is a cultural phenomenon and it will be futile recreating western values and culture in Nigeria, let alone the inclemency of the climate. Building designs'must respond effectively to the generalized zonal climatic characteristics. This is imperative to steer the emergence of the needed responsive architecture for 21st century Nigeria as against current practices, which tend to reduce architecture to economic utilities with marginal functionalism and without recourse to contextualism. The emerging architecture must not only be appropriate to the climate and culture but also maximize the potentials of the site and the materials available for construction. This will engender better building, performances in all cultures and climates.

**iii)** In view of the ridiculous building plan approval process in the country, the Nigerian Institute of Architects and the Architects Registration Council will need to see to the activation of relevant laws to ensure that all building plans are endorsed by a licensed architect practising in the country before approval is given. The dormant statutory regulations regarding the composition of the Planning Authorities need to be repositioned for effectiveness and goal actualization.

**iv)** Throughout history, designers have had to respond to challenging and changing terrain of practice in terms of political, economic and social dimensions. Consequently, radical public education and enlightenment drives will need to be embarked upon by all stale chapters of the Nigerian Institute of Architects towards envisioning the public for architectural renewal in the country.

**v)** The institute will need to rigorously pursue the review and empowerment of the Nigerian Copyright Act 990 and the Copyright Provisions in the NIA conditions of Engagement and Consultancy Services Agreement for a dynamic relevance to architectural practice within the Nigerian setting. These will halt flagrant duplication and transplantation of building designs across the nation.

vi) Quacks have multiplied greatly against professionals in the field of practice and power is a game of number particularly

under a democratic climate. It will be pertinent for the Nigerian Institute of Architects in collaboration with the Association of Architectural Educators of Nigeria to work out ways of removing hindrances and hiccups in architects' registration nationwide.

## Conclusion

This paper acknowledged the reality that many buildings across the Nigerian Landscape are not congenial with their prevailing local climates pointing out the discomforts and problems associated with their developments. It unearthed key factors responsible for the phenomenon and bemoaned the gradual trend in which architecture is being reduced to mere economic utility. Instead, it advocated contextualism, which includes harmony with the climate, the culture, the surroundings and local materials. It asserted that the emerging architecture will produce buildings of better performance.

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