LANDSCAPE PLANNING AND THE OUTDOOR SPACES IN THE BUILT ENVIRONMENT: EVIDENCE FROM ENUGU, NIGERIA

By

Arc. Bemsodi Linda Eke (Ph.D)
Department of Architecture
Institute of Management and Technology (IMT), Enugu

Abstract

The relationship between landscape, outdoor spaces and built environment cannot be overemphasized. This study therefore empirically investigates the extent of landscape planning and the outdoor spaces in the built environment in Enugu urban. Primary data for the study were extracted from questionnaires distributed to twenty five (25) professionals in the field of environmental sciences namely; Architects, Town Planners and Surveyors. The statistical analytical tool employed in the study is the one-sample t-statistics. The major finding of the study was that the application of landscape planning and outdoor space in Enugu urban is eminent (p-value = 0.000 < 0.05). It is therefore the recommendation of this study that the government of Enugu state should review relevant policies and schemes to ensure that urban design proposals are made to consistently include landscape elements. Also, outdoor spaces and development projects in Enugu urban areas should be planned and designed to conform with existing landforms instead of bulldozing to bring the topography of an area to the same level.

KEYWORDS: Built Environment, Landscape and Outdoor Spaces.

INTRODUCTION

The engagement of physical planning is to transform the developable and developed surfaces of a settlement into an aesthetically healthy, beautiful, and

optimally functional environment for its residents. Adoniyi (2014) asserts that the design, management and growth of the physical environment should be in accordance with pre-determined policies. Physical planning is viewed as a very costly enterprise but the benefits most times greatly outweigh the costs.
Empirically, landscape planning is the development and application of strategies, policies and plans to create successful environments, in both urban and rural settings, for the benefit of current and future generations (Udoji, 2013).

In this era of rapid and aggressive urbanization of most Nigerian cities, there is a justifiable need for a readjustment in environmental policies and use of natural endowments to ensure aesthetic beauty and improvement of the quality of our environment through landscaping. Landscaping primarily aims at shaping the environment for the comfort of man. Igbozurike (2016) saw it as the art and science of restructuring the man-made environment in order to bring it into closer harmony with nature. It helps achieve a restoration of the immense ecological imbalances brought about by the activities of man on the environment. At the moment, several urban centers in Nigeria are in dreadful condition and many of them are convalescing from the heinous socioeconomic blow of the non-operational Structural Adjustment Program (SAP) as viewed by Urua (2015).

One cannot speak of landscape and outdoor spaces without giving due consideration to the concept of built environment. The term built environment can be seen as the human-made environment that make available the scenery for human activity, ranging in scale from buildings and parks or green space to

neighborhoods and cities that can often embrace their supporting infrastructure, for example; water supply or energy networks (Bernard, 2014).

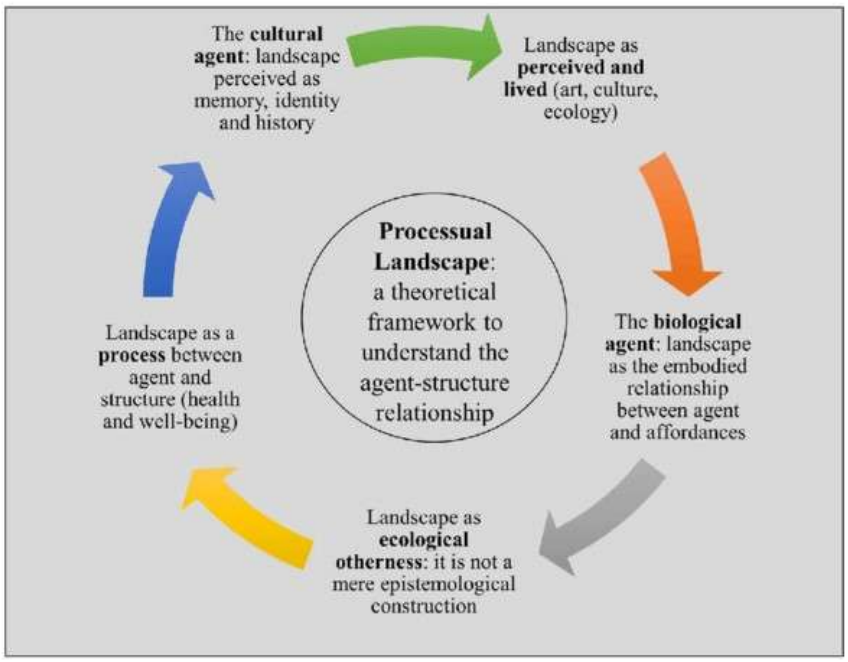
In Enugu urban, for example, it is considered a thing of luxury having a consciously landscaped property. It is not seen as an important addition to the environment. In approval of building plans, major attention is paid to the structural attributes, but not the environmental benefits. The objective of this paper is to examine the extent of landscape planning and the outdoor spaces in our built environment: a study of Enugu urban.

LITERATURE REVIEW Conceptual Issues

Landscaping as a Strategy for Improving the Nigerian Urban Environment

Various landscape elements can be used to landscape and improve the quality of the urban environment. These include vegetation or plants, water bodies, landscape features (natural and man-made) and landforms. The value of an urban area depends on how these elements are explored and effectively manipulated by designers (Aldous,2004). Landscape elements sometime exhibit seasonal variations. For example, erosion can change the character of a mountain or hill; plants bear fruits and have other similar variations while the flow and color of water changes especially during the rainy season. Landscape is full of life. If architecture is described as a frozen music, then the landscape can be described as a growing, living music. The following can be harnessed for effective and sustainable landscape elements in order to enhance our urban environment and ensure a conducive atmosphere. Figure 1 demonstrates a landscape diagrammatical framework:

Figure 1: *Landscape Cycle Framework*

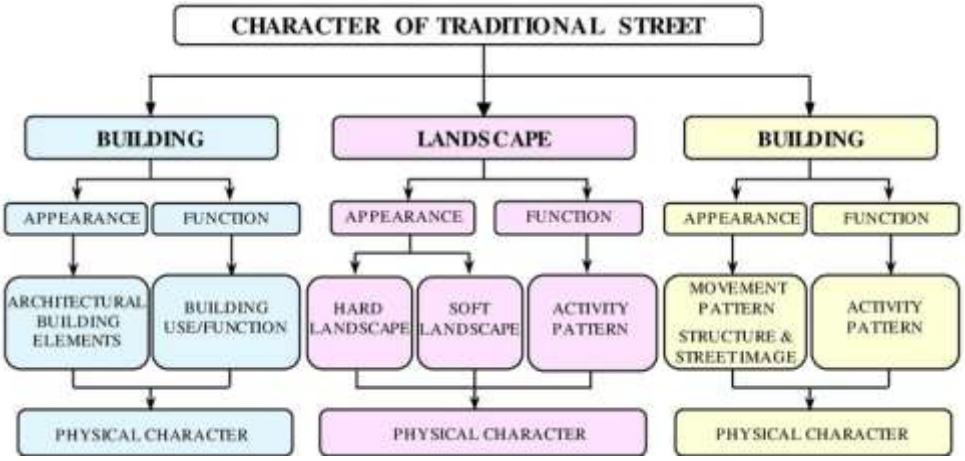


Source: *Landscape Ecology, 2012.*

Figure 1 above demonstrates the theoretical framework in understanding the agent-structure relationship of landscape planning and associated elements. It starts from landscape as an ecological otherness to landscape as a process between agent and structure, to the cultural agent, to landscape as perceived and lived and finally to the biological agent of landscaping.

Figure 2 demonstrates an extension of landscape conceptual dynamics

Figure 2: Landscape Conceptual Dynamics



Source: *Hsd Institute, 2012.*

The landscape conceptual dynamics demonstrated in figure 2 displays the interconnectivity between building and landscape. It shows in details the connectivity of character of traditional street through landscape patterns, architectural building elements, building function and appearance.

Water Bodies

Environmental planners can integrate water bodies in their planning to create a comfortable environment. Water bodies can either be natural like oceans, lakes etc. or man-made; like fountains and pools. Because of its sparkling color, its musical and cooling effects, water bodies improve the aesthetic value of an environment. As a result, they normally attract relaxation centers like hotels and tourist centers among others (Fred, 2011).

Vegetation

Vegetation like trees, grasses and shrubs can change even the most hostile, bare and oppressive environment into a comfortable and pleasant area for its residents. Among other advantages, vegetation helps to link buildings to each other and to external spaces thereby integrating the entire urban landscape into one. They also help to separate incompatible land uses from one another for example, industries from residential areas. Plants can guide and direct pedestrians and vehicular circulation within the urban areas especially when planted along the highways or in the central divide. In addition, trees with good shade can provide resting places for road users. They can also be used to demarcate houses for screening and visual barrier, thereby concealing undesirable sights. The choice of any type of plant should not only please the eyes and suit the soil and clients but if skillfully contrived, it can make a meaningless urban area rich and unique (Fred, 2011).

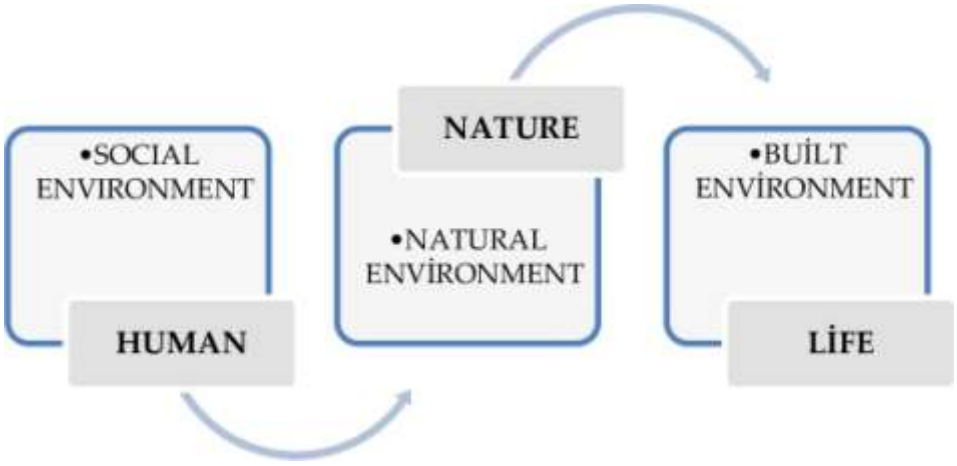
Landforms

Landform is one of the basic elements of landscaping. It is the configuration of landmasses and may include vegetation covers as long as the vegetation appears to blend with the land. Some of these landforms such as mountains, plateau, plains and valleys can be integrated into the urban environment to improve the quality of the area. On the whole, the aesthetic value of our urban areas can be greatly, improved when two or all of these landscape elements are efficiently manipulated and integrated into the urban environment.

Built Environment

In the engineering and social sciences, the term built environment, or built world, refers to the human-made environment that provides the setting for human activity, ranging in scale from buildings to cities and beyond (James, 2018). It has been defined as "the human-made space in which people live, work and recreate on a day-to-day basis. The built environment encompasses places and spaces created or modified by people to serve their needs of accommodation, organization and representation (Iyoha, 2017). The topic of built environment also includes the ways in which communities have approached environmental issues that have arisen as a result of such altering of the environment for human activities amongst those of plants and animals (Gerald, 2018). The sciences of the built environment cover architecture, urbanism, building technology, civil engineering, landscaping and the management of built stock mutations and operations. Figure 3 demonstrates a simple framework of built environment.

Figure 3: *Built Environment Framework*



Source: *Hosteller, 2010.*

Outdoor Spaces

Outdoor spaces are valuable resources. They help to improve the quality of life in urban areas. They have essential environmental functions and increase the attractiveness of the city. Parks and natural areas can be used for recreation; wetlands and forests provide storm water, drainage and wildlife habitat; farms and forests provide aesthetic benefits to surrounding residents. In fast growing urban and suburban areas, any preserved land can offer relief from congestion and other negative effects of development. Both publicly held and privately held lands can provide open space benefits (Wald and Hosteller, 2010).

Outdoor spaces are areas for recreation. They serve other functions such as giving form and aesthetic value to a community. Indeed, outdoor spaces serve very basic human needs and values as Banon (2006) asserts that there is certain physical relief in open spaces that cannot be underestimated. It gives us visual relief from the tangled, jarring and often monotonous sight of urban development and a sense of orientation and community identity. Very few can picture the location of every street in town, but most of us can immediately place the location of an attractive outdoor space in our mind's eye. Little (2009) opines open space offers recreation opportunities, attractive community design which a visually pleasant landscape and the environment amenity supply, and maintains natural processes or conservation. Each of these three functions basic functions has inherent physical, social and economic benefits and in many cases all three functions can be served by one piece of land or one system of open space.

Theoretical Framework User Centered Theory

This work is centered on user centered theory postulated by Vischer in 2008. This theory posits ways to analyze, understand and evaluate ways in which it does this is to explore systematically and in detail the user's experience. This is a complex task. First of all, there needs to be agreement on who are the users. They may be carrying out activities inside the built environment, and they might also be users of spaces created outside the enclosing architectural elements (gardens, streets, stairs, hospital rooms, office buildings, etc.). There is likely more than one homogenous user group in a given situation, and their interests may clash. For example, users of prisons include offenders – who would prefer more freedom of movement – and guards – who prefer that movement of the prison population be restricted – as well as visitors and administrative staff whose activities may not be considered at all.

Empirical Studies

Emeasoba et al (2017) examined the impact of doing away with open spaces on the socio-economic development of Enugu urban in Nigeria. Field survey with likert-scaled structured questionnaire reached randomly selected 400 residents out of 722,664 population of the city. Two hypotheses that guided the study were tested with Pearson's Chi-Square Cross Tabulation Statistics using SPSS E-Views 7.0. Results showed, among others, that significant relationship existed between city open space and the conversion impact on the socioeconomic development of Enugu urban. It was recommended, among others, that there should be proper

planning and adherence to it for efficient use of open spaces in Nigerian cities as well as a more precise approach to urban development.

Kingsley and Christopher (2017) examined the importance of landscaping for an improved urban environmental quality in an era of rapid urbanization in Nigeria. While acknowledging the fact that a greater percentage of the Nigerian urban environment is in very deplorable conditions the writer highlights the advantages of landscaping as a strategy for improving the environmental quality of our cities. The study revealed a gross neglect of urban landscaping in Nigeria. Policy recommendations geared towards effective landscaping of the urban environment for improved physical development were made.

Anifowose (2016) analyzed the concept of sustainability particularly within the built environment. It looks into the principles and indicators for sustainability of the environment and the resulting problems. Furthermore, a case study of Akure urban core was carried out to assess the uses and landscape status of the open spaces. The results when statistically analyzed showed the inadequacies in the provision and management of the open spaces in the study area. It therefore recommends attainable policies for the effective sustainability of the environment.

METHODOLOGY

Using structured likert-scaled questionnaire, field survey collected primary data from randomly selected target respondents. The questionnaire was distributed to twenty five (25) respondents distributed among selected architects, town planners and surveyors.

Data for this study was analyzed with the one-sample t-statistics. This statistical tool was used to analyze the application of landscape planning and outdoor spaces in our built environment. The t*-statistics is given by:

$$t^* = \frac{\overline{x_1} - \overline{x_2}}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

Decision Rule (Probability Value)

Reject the null hypothesis (Ho) if the P-value < 0.05 Do not reject if otherwise.

The Statistical Package for Social Sciences (SPSS) will aid the data analysis.

DATA ANALYSIS AND INTERPRETATION OF RESULTS

In the course of the study, 25 copies of the questionnaire were distributed to the respondents distributed among the aforementioned professionals. Information extracted from the questionnaire was analyzed with the onesample t-statistics.

Results Presentations and Analysis Table 1 One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	T	Df	Sig. (2tailed)	Mean Difference	Lower	Upper
Landscape Planning and Outdoor Spaces	22.234	3	.000	15019.54750	12869.7818	17169.3132

Source: *Researcher's Computation Using SPSS Software.*

Decision Rule

Reject the null hypothesis (Ho) if the P-value < 0.05 Do not accept if otherwise.

Table 1 clearly shows that based on the responses of the respondents, the tstatistics yielded an absolute value of 22.234 and a corresponding probability value of 0.000 < 0.05. This compels us to conclude that the application of landscape planning and outdoor space in Enugu urban is eminent. This is environmentally promising based on the findings of the study.

CONCLUSION AND RECOMMENDATIONS

This study has been able to empirically analyze landscape planning and outdoor spaces in our built environment. In the course of the study, Enugu urban used as the area of coverage. This was chosen because it was believed that Enugu urban

cities primarily receive landscape plans, benefits and environmental consequences. Data for the study was primarily extracted from professionals: architects, town planners and surveyors, all resident in Enugu urban. Based on the findings and conclusion of the study, the following recommendations were suggested:

1. The government of Enugu state should review relevant policies and schemes to ensure that urban design proposals are made to consistently include landscape elements and outdoor spaces.

2. Where they are already available in the urban environment, efforts should be made to develop an efficient maintenance culture which is geared towards the up-keep of landscape elements so that they do not lose their value.

3. Development projects in Enugu urban areas should be planned and designed to conform with existing landforms instead of bulldozing to bring the topography of an area to the same level. This will help reduce the initial costs of construction as well as help check drainage problems.

4. The government of Enugu should mount a campaign to educate the masses on the importance of landscaping the urban environment especially in this period of rapid urbanization.

References

Adoniyi, B.N (2014). "Why Landscapes of the Past are Important for the Future". *Landscape and Urban Planning 70, 21–34.*

Aldous, G.H (2004). Tracking restoration in natural and urban field settings. *Journal of environmental psychology, 23: 109-123.*

Anifowose, F.D (2016). *Architecture Vehicle of Social Integration: Panacea for National Stability.*

Banon, B.G (2006). The role of physical plan in the formulation and implementation of national development plans". In *physical planning inputs. National and state development plans. Urban and Regional Planning Workshop Ibadan.*

Bernard, J. (2014). *The rural landscapes of Africa - How man has shaped African nature.* Stockholm: Formas.

Emeasoba, G., Ndudi, J. & Benjamin, C. (2017). Urban Environmental Landscaping: A Strategy for Improving the Environmental Quality of Enugu City.

Fred, K. (2011). Landscape architects and surface mine reclamation: Establishing the efficacy of linking ethics, aesthetic preference, ecological health and the concept of sustainable development within the content of a reclamation of an open pit mine, *MA Thesis, University of British Columbia.*

George, M. (2013). Landscape change and the urbanization process in Europe, *Landscape and Urban Planning, 67(4): 9–26.*

Igbozurike, V. (2016). The need for landscape architecture in the developing countries. *Journal of the Nigerian institute of architects*, 12(3): 111-121.

Kingdley, V.O (2014). *An introduction to landscape architecture.* London: Elsevier Publishing Company, Incorporated.

Kingsley, E. & Christopher, D.E (2017).The value of architectural landscaping on buildings in Nigerian cities.

Little, C.R (2009).*Opportunities in landscape architecture.* New-York; national textbook company.

Udoji, D.F (2013). Linking modelling and visualisation for natural resources management. *Environment and Planning B: Planning and Design 24, 345-358.*

Urua, D.R (2015).Realistic Modeling and Rendering of Plant Ecosystems. *Computer Graphics Proceedings, Annual Conference Series, ACM SIGGRAPH, 275-286.*

Wald, D.R & Hosteller, B. (2010).*Michigan Historic Cemetery Preservation Guide*. Published with the assistance of chartered Township of Canton.