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Perceptible Attributes of Urban Greenspaces in the Architectural Characterization of Metropolitan Areas in Jos, Nigeria

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Abstract

The study surveyed the perceptible attributes of urban greenspaces of the built environments of metropolitan areas of Jos. A sample of five greenspaces; NTC garden, Solomon Lar Amusement Park, Grey garden, Suzi garden and Candy garden were selected through stratified random sampling as well as simple random sampling. The data required for the study was obtained from users and inhabitants around the selected greenspaces. The data was obtained by administration of structured interview to a sample size of 365 respondents. The outcome of the surveyed revealed that the attributes of greenspaces play the generative role in the process expressed by the synergy of the aesthetics of the built form with green space that is perceived.By implication therefore, a preemptive action plan in developing a more exhaustive and long term vision for green spaces, a comprehensive policy framework for implementation of more regulations and changes that will integrate more green spaces into the planning and design of metropolitan areas of Jos metropolis and perhaps Nigerian cities beset by similar situation be established.

Keywords: perception, greenspaces, symbiosis, synergy and architecture characterization.

1.0 INTRODUCTION

Green spaces (parks, gardens etc.) are essential parts of any environments which constitute a determining element of the character, quality and functional value of metropolitan areas. Uniquely, it addresses a range of stakeholders' needs from the local and neighbourhood level through planning towns, cities and metropolitan areas as a national policy agenda (Glasgow & Clyde 2006 cited in Sati 2014 and 2015).

According to Falade, (1988 in Sati, 2014) the importance of green spaces in any built environment cannot be more important than it is because none can grow strong without green spaces. The beauty of building forms and images and the visual quality of metropolitan areas are dependent on the quality and quantity of green spaces. When harmony exists between metropolitan buildings and green spaces, it is simply functional, liveable, amenable and enjoyable. Nigel, (2002) pointed out that the perception that someone has of green space can significantly affect the use of green space. The image and attractiveness of towns and cities strongly influence people's perceptions of a place. A lack of well managed and cared for vibrant, healthy, urban greenspace, will undermine a town or city's appearance, and discourage a positive impression that is a good place in which to live, work and do business.

The architect is among other things an artist whose one of the most important functions is to create harmony and preserve beauty in the built form. It is concerned with promoting the comfort, convenience and health of urban population that urgently need to have their hurry work-a-day lives refreshed and calm by the beautiful and reposeful sights which green spaces can abundantly provide (Hubband and Kinbal, 2010 in Sati, 2014). The kind of aesthetic emotion we feel before an architectural edifice derives from the emotion we feel from green spaces (Berger, 1985).Tucker, (2007) asserts that generally, not much research has been carried out to survey the perceptible attributes of green spaces within neighbourhoods with the view of improving the quality of green spaces in metropolitan areas including some of Jos metropolitan areas.

This study cover its enquiry mostly from the aspect of architecture and landscape architecture.

2.0 LITERATURE REVIEW

From the view of architects, green space is the soft component that composes an integrated urban space with hard space enclosed by entities. The landscape function of green spaces mainly reflects on space, time and location. Green vegetation can enrich the urban architecture complex skyline and intenerate the hard space through their different forms, colours and styles. Green spaces do not only beautify the urban features and set off architecture, but also improve aesthetic effect which makes the urban environment more uniform and more diverse. Meanwhile, in order to embody the landscape value of symbolic aesthetics, it can combine different kinds of green spaces to enclose and create a good urban space image (Huang, 2002).

Lynch influenced the field of city planning through his work on the theory of city form, and studies relating to human perceptions of the city on the perception of the city environment and its consequences for city design.

Lynch says:

Looking at metropolitan areas can give a special pleasure, however, commonplace the sight

may be. Like a piece of architecture, the city is a construction in space, but of a vast scale, . . . perceived only in the course of long spans of time . . . At every instant, there is more than the eye can see, more than the ear can hear, a setting or view waiting to be explored. Nothing is experienced by itself, but always in relation to its surroundings, the sequences of events leading up to it, the memory of past experiences. . Every citizen has had long associations with some part of his city, and his image is soaked in memories and meaning. . .

Urban green space is the critical element for people to recognise and to grasp the landscape structure. It has a strong imageability because of its tuneful colours, integrated shape, intimate scale and obvious greenness. On the other hand, green space has become an important element to embody the urban culture and reconstruct the urban feature. This is because more and more people have felt metropolis has its own characteristics (Shi, 2002). It means that thinking and emotion, which are based on the local natural characteristics, can create a specific cultural landscape with those natural landscapes such as local terrain, soil, vegetation, water body as the urban green landscape line. Green spaces generally occupy 25% - 30% of the urban landuse, which will be the element influencing on the urban feature. In addition, every space has its specific form, colour and style. For example, Lincoln Park, Grand Park and Jackson Park connected by the green belts, have their own playground, botanic garden gallery, museum and other facilities which have endowed the metropolis with more cultural meanings and create a large- scale, impressive green space system in the world (Yang, (2003).

Green space can play a psychological role to people. From the view of chromatics, lake blueness and vegetation greenness belong to impassive colours that make people calm down. If there is not enough blueness and greenness but full of exciting redness in the metropolis, there will be no peace environment for the residents (Shi, 2002).Therefore, it can be shown that people must live together with nature.

People, as a single entity, have a mutual relationship with existing environment. Kurt Lewin, a German psychologist, described such relationship as the following principle, which constitutes a basic frame of "Field Theory" (Shi, 2002):

$$B = f (P, E)$$

B……..behaviour,   **P**……..personality,   **E**.........environment

The above three parameters can transfer with each other. It means that people's behaviour is the mutual result of realistic natural and social environment. It is found that green spaces with attractive environment help to eliminate physical exhaustion and intellectual repression and satisfy people's physiological necessities. Also, green spaces in a good layout form can create some relatively private and private spaces, not only making people homelike and relaxed, but also satisfying people's safety condition. Green spaces can preserve an attractive, clean, calm environment for working and study.

Contemporary architecture has been strongly influenced by the concept of green space in recent times. Human space has always been given form in natural analogies. Architecture for a long time referred to nature in tectonics or ornament. In contemporary architecture, analogies to nature are transforming the concepts of form and space, after both form and space had undergone revolutionary developments in modern architecture. Contemporary architects often times refer to specific formal and spatial aspects of green spaces to describe their designs and summarize them under the term 'landscape' with various connotations (Jauslin, 2010).

2.1 Perception and Interpretation of Form in the Built Environment

Man's perception of and experience with form largely draws upon conformity of most configurations to recognized fundamental geometrical shapes known as 'primary forms'. Primary forms such as the cube, the sphere, the cylinder, the cone and the pyramid together with their constituent elements have standard properties which excite the primary sensations and permit the creation of a universal transmittable plastic language (Gablik, 1976; Haviland, 1979; Corbuzier and Ozenfant, 1975 cite in Uji, 1994).
According to Uji in 1986:

When the primary forms are combined or associated with numerous other natural or artificial forms resulting in complex forms such as buildings, varying and disparate sensations known as secondary sensations are awakened in us, so that evaluation and interpretation of these forms will depend on our cultural and trained sense reactions.

Where some people are aware of areas and sequence of areas, and perhaps, heights and volumes of greenspaces and buildings, others with a more highly developed perceptual ability will perceive the totality of the effect of the structural form of the greenspace and building. While some react to the formal qualities and the orchestration of the organizing schema, others will be moved by the total image of the work and recognize its significance at a high level of cultural intention (Zygas, 1978; Munriel, 1980). Whatever, the disparity in our sensory reactions to form, the highest delectation of the human mind therein is the arousal, perception and acknowledgment of the feeling of the sense of participation in, and the interpretation of the order inherent in the formal combination.

2.2 Synergy between Greenspace and Architecture.

Architecture defines our contemporariness, which has always been a spatial expression of time of its transformation (Gerhard, 2012).Synergy is one of the forms of emergence which is a common way of creating

S/N	locales of areas with amenity	Amenity green spaces identified	Status of amenity green spaces Criteria used: *synthesis, organisation, order,*

architecture and cities. Synergetic interaction in the synectics of perception process intensifies the creative symbiosis of various layers of environmental elements. The elements of synergy play the generative role in this process expressed by the synergy of the aesthetics of the built form with green space that is perceived. However, green space development has emerged as one of the most compelling in the architecture of present times (Sang, 2012).

3.0 METHODOLOGY

There are two basic groups of green spaces; the natural habitat and amenity; this study centred on amenity green spaces. **The study covered amenity green spaces located within the neighbourhoods' of selected urban areas of Jos metropolis.**
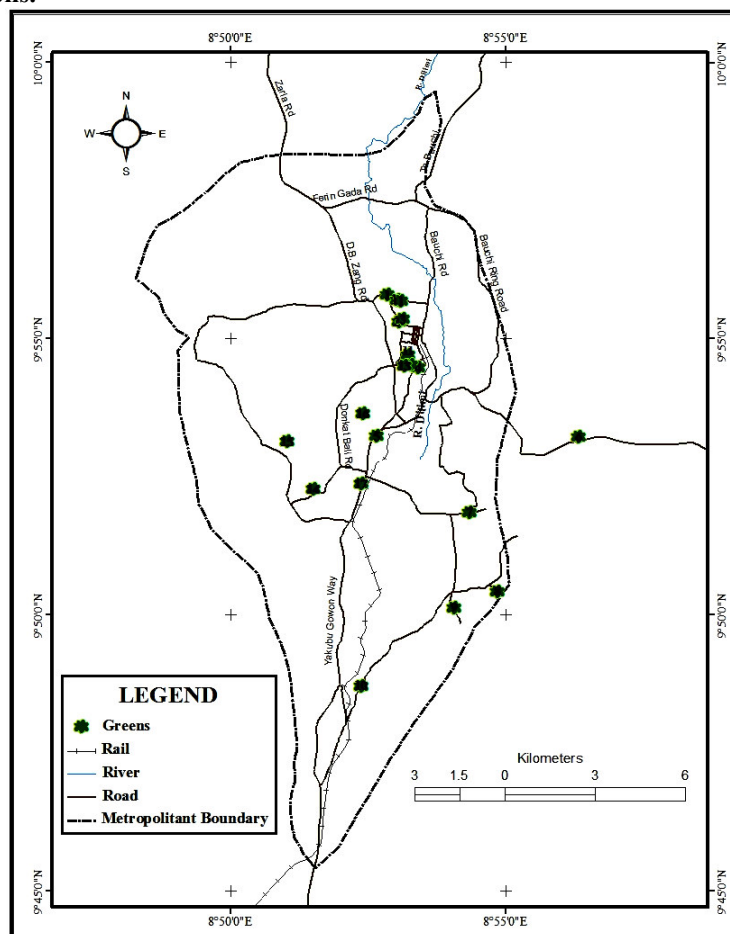

Figure1 Distribution of amenity Green Spaces in Jos metropolis
Source: Unijos GIS Laboratory.

		green spaces	*rhythm, sanitation .Antoniades, (1980)*				
			Excellent	Good	Aver-age	Poor	Very Poor
1	*Anglo Jos*	1 NASCO Green Park		●			
		2 NTC Garden		●			
2	*Dalhatu Protégé*	1 CBN Park				●	
		2 Eslie Garden			●		
		3 Luji Garden		●			
		4 Jos Zoo	●				
		5 Noad Avenue Garden				●	
3	*Jenta Adamu*	1Polo Green Field		●			
4	*Ray Field*	1 Gold and Base Garden			●		
		2 Langsfield Park		●			
		3 Rayfield Golf Course		●			
		4 Rayfield Resort				●	
5	*Tafawa Balewa*	1 Grey Garden			●		
6	*Tudun Wada*	1 Baxter's Garden		●			
		2 Jos Wild Life Park	●				
		3 Solomon Lar Amusement Park	●				
7	*Vander Puye*	1 Suzi Garden				●	
8	*Zaria Crescent*	1 Candy Park (I)					●
		2 Candy Park (II)					●
		3 Candy Park (III)					●
		4 Candy Park (IV)					●

Table1 locales and Status of amenity Green spaces within some selected urban centres of Jos metropolis.
Source: authors field survey

3.1 Instruments and Procedure for Data Collection

A sample of five greenspaces were selected through stratified random sampling as well as simple random sampling The data required for the study was obtained from users of the selected greenspaces. The survey focused on individual as well as inhabitants around the greenspaces. This data was obtained by dint of administration of structured questionnaires to a sample size of 365 respondents.

4.0 DATA PRESENTATION
4.1 Comparative Data Presentation

The replies of respondents with the result shown in table 2 show that in NTC Garden, 14 respondents, representing 23.4%, identified substandard pavements; in Solomon Lar Amusement Park, 29 respondents, representing 34%, identified attractive plants; in Grey Garden, 26 respondents, representing 40%, identified poor access road; in Suzi Garden, 18 respondents, representing 34%, identified substandard pavements and in Candy Gardens, 31 respondents, representing 37%, identified poor access road as overall mental images of green spaces.
Table 2: Overall Mental Image of Green Spaces

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	NTC Garden Sample Size (60)		Solomon Lar Amusement Park Sample Size (97)		Grey Garden Sample Size (68)		Suzi Garden Sample Size (57)		Candy Garden Sample Size (83)	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Water Body	02	3.3	28	32.8	17	30.8	07	08	19	29.8
Poor Access Road	11	18.3	11	08	30	41.2	17	32.8	36	38.2
Substandard Pavements	14	23.4	22	24	14	20	30	35.6	19	24
Attractive Plants	33	55	36	35.2	07	08	14	24	10	08
Total	60	100	97	100	68	100	57	100	83	100

Source: Authors field Survey.

The responses of respondents with the result shown in table 3 show that: in NTC garden, 40 respondents, representing 77.6%, identified good organisation; also in Solomon Lar Amusement Park, 59 respondents, representing 77.6%, identified good organisation; in Grey garden, 48 respondents, representing 77.6%, identified poor sanitation; in Suzi garden, 33 respondents, representing 77.6%, identified poor sanitation and in Candy gardens, 60 respondents, representing 71%, identified poor sanitation as one feature of green spaces to later recall.

Table 3: One Feature of Green Spaces to later recall

	NTC Garden Sample Size (60)		Solomon Lar Amusement Park Sample Size (97)		Grey Garden Sample Size (68)		Suzi Garden Sample Size (57)		Candy Gardens Sample Size (83)	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Good Organisation	46	80.8	78	80.8	14	19.2	14	19.2	16	19
Poor Sanitation	14	19.2	19	19.2	54	80.8	43	80.8	67	81
Total	60	100	97	100	68	100	57	100	83	100

Source: Authors field Survey.

The responses of respondents with the result shown in table 4 show that majority of respondents: in NTC garden, 23 respondents, representing 46%, identified grass, flowers and trees; in Solomon Lar Amusement Park, 38 respondents, representing 46%, identified grass, flowers and trees; in Grey garden, 31 respondents, representing 46%, identified grass, flowers and trees; in Suzi garden, 23 respondents, representing 47%, identified grass, flowers and trees and also in Candy gardens, 62 respondents representing 87.2%, identified grass, flowers and trees as the most important feature of green spaces.

Table 4: Most Important Feature of Green Spaces

	NTC Garden Sample Size (60)		Solomon Lar Amusement Park Sample Size (97)		Grey Garden Sample Size (68)		Suzi Garden Sample Size (57)		Candy Garden Sample Size (83)	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Access Road	21	41.2	34	41.2	21	41.2	14	40.2	08	5.6
Grass, Flowers, Trees	28	49.6	46	49.6	36	49.6	32	50.6	68	90.8
Water Body	11	3.6	17	3.6	11	9.2	11	9.2	07	3.6
Total	60	100	97	100	68	100	57	100	83	100

Source: Authors Field Survey

The replies of respondents with the result shown in table 5 show that majority of respondents: in NTC garden, 31 respondents, representing 52%, perceive attractive plants; in Solomon Lar Amusement park, 50

respondents, representing 52%, also perceive attractive plants; in Grey garden, 61 respondents, representing 90%, perceive poor planting systems; in Suzi garden, 43 respondents, representing 75%, perceive poor planting systems and in Candy gardens, 80 respondents, representing 95.2%, perceive poor planting system as a feature of green spaces to always recollect.

Table 5: A Feature of Green Space to always recollect

	NTC Garden Sample Size (60)		Solomon Lar Amusement Park Sample Size (97)		Grey Garden Sample Size (68)		Suzi Garden Sample Size (57)		Candy Garden Sample Size (83)	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Attractive Plants	31	52	50	52	02	03	10	25	03	4.8
Good Roads & Pavements	20	40	40	38	05	07	47	75	80	95.2
Poor Planting System	09	08	07	10	61	90				
Total	60	100	97	100	68	100	57	100	83	100

Source: Authors field Survey.

The analysis were put together to give interpretations to the outcome of the survey.

5.0 DISCUSSION

The results obtained from interview of users perceptible attributes of green spaces in the five urban greenspaces confirmed that in NTC Garden and Solomon Lar Amusement Park, good looking plants are their overall mental image of green spaces in the neighbourhoods because the plants are attractive, they add colour and texture to the landscape of the surrounding which fascinate users to take-in-the-views.

Also one feature of NTC garden and Solomon Lar Amusement Park to later recollect is the organisation of the greenspaces that are integrated in styles with trees, shrubs, ground covers and lawns properly arranged along landscape boarders.

Furthermore the most important features of the green spaces are the hierarchy of plants. The form of plants such as palm trees, weeping willows look wonderful along garden ponds and the vertical branches contrast with the horizontal plane of the existing water channel that creates a balance of function and organisation of the green spaces with first-thing-first and everything is in place.

Finally, the features of the green spaces to be forever recollected are the standard access roads, pavements and plants which have visual paths that ties landscape elements together to create rhythm and balance that makes the entire green spaces look and feel comfortable.

In Grey garden and Candy gardens are disorder of green spaces while in Suzi garden, bad roads, distasteful plants and substandard pavements are their overall mental images of green spaces because they are unappealing and making the entire green spaces uninviting.

Also one feature of green spaces in Grey garden, Suzi garden and Candy gardens to later recollect are the poor sanitation of the green spaces and with supply of inadequate basic facilities. These appear to be as a result of lack of care of the green spaces and are frequently use for collection of solid waste from the surrounding buildings making the green spaces gloomy and melancholic. They are characterise with over grown trees, absence of flowers, shrubs, grass and lack of toilet facilities, poor drainage systems and archaic garden chairs. The most important feature of the green spaces in these areas revealed to be the hierarchy of plants among landscape elements which seem to form a sense of balance of utility and arrangements of the green spaces.

Finally, the features of the green spaces to be forever recollected are the poor planting systems of the green space. Perhaps for lack of care, the plants in the green spaces have declined, died and deteriorated from a range of causes such as unfavourable environmental elements that result in either waterlogged or drought conditions which may be the common causes of poor state on landscape plants and they appear generally sickly and unproductive.

6.0 CONCLUSION

From the overall survey of the perceptible attributes of the green spaces in the metropolitan areas of Jos, some of the green spaces have made positive impact, for instance the architecture of Solomon Lar Amusement Park, NTC Garden reflect all the components of green space within architectural characterization. Most users and inhabitants affirmed that the architecture of the Parks and gardens reflect traditional identity and the aesthetics of the environment is attractive and enjoyable. Other green spaces such as Grey, Suzi and Candy gardens are dilapidated with unpleasant visual quality and can be said to affect the quality of the built environment of the

area.

It is affirmed that greenspaces are the resilient vistas that support architectural characterization; promote landscape connectivity, enhance quality of the environment and maintains the integrity of the landscape. Greenspaces can meet the complex needs of our ever-changing landscapes and promote a more holistic approach to its development and management.

By implication therefore, a preemptive action plan in developing a more exhaustive and long term vision for green spaces, a comprehensive policy framework for implementation of more regulations and changes that will integrate more green spaces into the planning and design of metropolitan areas of Jos metropolis and perhaps any city beset by similar situation be established.

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