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Perception and Interpretation of Components of Architectural Composition of Selected Urban Centres - Jos Metropolis, Nigeria

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Abstract
The study investigated the perception and interpretations of components of architectural composition of selected urban centres of Jos metropolis with the view to develop a planning strategy that will provide policy makers, architects and planners in emerging the necessary policies of urban planning and design. This concept was the focal problem the study sought to investigate scientifically. By dint of the simple random sampling, the study selected five neighbourhoods out of the existing eight namely; Anglo-Jos ward, Tudun Wada ward, Tafawa Balewa ward, Vander Puye ward and Zaria Crescent ward. From the five selected wards a total sample of 365 respondents was determined as the sample size for the investigation. Structure interview were employed in obtaining the required data of the perception and interpretations of components of architectural composition of selected urban centres of Jos. The outcome of the investigations provides a basis for notional significances, perceptual awareness, and planning instruments that can sustain the improvement and development of infrastructure and resources of the built environments of Jos urban centres and perhaps Nigerian urban centres.
Keywords: perception, interpretation, urban centres, components and architectural composition

1.0 INTRODUCTION

The particular way in which inhabitants view the urban or metropolitan area, through their personal experiences of the mind is the real world as far as they are concerned. People's encounters in the same urban environment do not necessarily result in common experiences and knowledge about all its physical and non-physical aspects. Elements of the metropolis with which the individual inhabitant is familiar, comprise their subjective image of the metropolis. (Gihring, 1975 cited in Sati, 2014a, 2015_b).

Certain form attributes of the physical environment are capable of communicating useful information to the inhabitants. For example, the particular bulk shape, location prominence or detail of a building may indicate to those who are familiar with its environmental setting, something about its function or appropriate use. Physical form elements (buildings for example) act as "perceptual cues" and as such convey bits of information to the perceiver. The process of receiving and processing such bits of knowledge is called environmental perception. Information received through the senses undergoes a selective process for the purpose of remembering. Out of a common culture and experience, people subconsciously adopt similar criteria to retain and classify discrete perceptual experiences into principal construct categories; human activity, physical appearance, function and location (Gihring, 1975 in Sati, Sati, 2014).

2.0 THEORETICAL FRAMEWORK

One of the main assumptions behind the work of Kevin Lynch which formed the basis for 'The Image of the City' was the issue of the ease with which we orientate ourselves within our surroundings. The sense of knowing where one is, or at least being able to navigate our environment with confidence, give us a feeling of wellbeing and the opposite situation – the sense of being lost and not being able to find one's way is a fundamentally troubling and stressful experience. It is one which is alluded to in an archetypal manner in fairy tales such as Hansel and Gretel in which children become lost in the woods and unpleasant things happen to them as a result (Burgess, and Limb, 2008).

Lynch's hypothesis was that the clearer the image of the city in our heads is, the easier it is for us to navigate and the greater our sense of well-being within our environment, whether it is a familiar or unfamiliar one. A good image is a clear one which can be easily read and understood. This concept of legibility can be transferred to the formal design of urban spaces in a number of ways, which will become clear shortly, but first it is important to consider why some images are more easily legible than others (Lynch, 1961 cited Burgess, and Limb, 2008).

The gestalt principles of perception provide a series of rules which attempt to explain how we perceive the world around us in terms of coherent objects and forms rather than just as a series of seemingly unrelated points, lines and areas. The gestalt rules of perception were originally formulated and developed by a group of psychologists during the 1920s and 1930s firstly in Germany and then in exile in America. While these rules were originally defined to explain the way in which we perceive two dimensional visual fields, they clearly also are applicable how we read and understand three dimensional elements of the built environment.

The first principle relates to figure-ground relationships. According to this a patch of one colour or texture in the middle of another colour or texture is perceived as an object which is afforded greater significance

than is given to ground surrounding it and is felt to stand out from it (Kessel et al,2009).

Further principles follow from this articulation of the simple figure against its background. The first of these relates to the juxtaposition of a series of similar figures which are arranged on a ground. Equally spaced a series of individual forms is seen, but if some are located closer to each other than the rest, those which are closer to each other are automatically seen as belonging together in groups. Elements which behave in a similar manner are also seen as belonging together, even if they are not located in close spatial proximity (Ian, 2010).

According to James et al, (2009), there is a series of different elements distributed across a visual field, the eye automatically picks out those which are similar to one another and organises them into groups. This effect can be strengthened still further if similar objects are also located in close juxtaposition with one another. The eye will also automatically complete forms which are in fact open or only partly articulated if it results in a shape which is easier to perceive. Clearly defined shapes which seem to make coherent sense are also perceived as being integral whole, even of the components out of which they are composed are diverse.

Such shapes can also be picked out relatively easily against complex backgrounds as they are immediately identified as having a higher degree of significance. These broad principles can be used to organise and design the elements of urban spaces paved surfaces, elements of furniture and vegetation, for example, in such a way that they will intuitively make sense to the observer and can be read quickly and confidently. This visual clarity is the basis for legible spaces in and through which users can navigate easily. These will therefore, by analogy with Lynch's arguments be spaces in which we will feel relaxed and at home.

Because such images are in the minds of the viewer, it can also be argued that spaces which are clearly and coherently organised will also be quicker and easier to grasp for those with visual handicaps, and they will therefore also be able to find their way around them with greater ease (James e al, 2009).

The design concept as narrative and symbolism and purely functional approach to design will seek to provide for the physical needs and to provide the concrete facilities which users expect or require, but good design is more. The built environment does not just have physical attributes, it also has meaning and it reflects the values of the users and local people in general. These meanings and values need to be investigated and taken into account during the design process and integrated as far as possible into the design concept. They may be reflections of the history of the site, involve memories of things which took place there or take the form of narratives relating to past events, real or imagined. Such stories are ways in which people find it particularly easy to relate to places. In design terms they may be reflected at different levels of the design: in the name of the space, in the way in which it is structured and organised, in the approach taken to integrating existing artifacts and elements into the new layout, and in the selection and use of materials and the way in which they are detailed (Svetlana and Nadja, 2012).

According to Bonta (1979) the process of verbalization of emotions and feelings and subsequent physical reaction towards perceived physical phenomena in accordance with those feelings is clearly a process of behavior. Van Den Berg (2007) avers that perceived environmental factors are better predictors for behaviour than objectively measured environmental factors. The relationship between perceived environmental factors is by separating the spaces into three viz: outer, experienced and inner spaces of figure1.

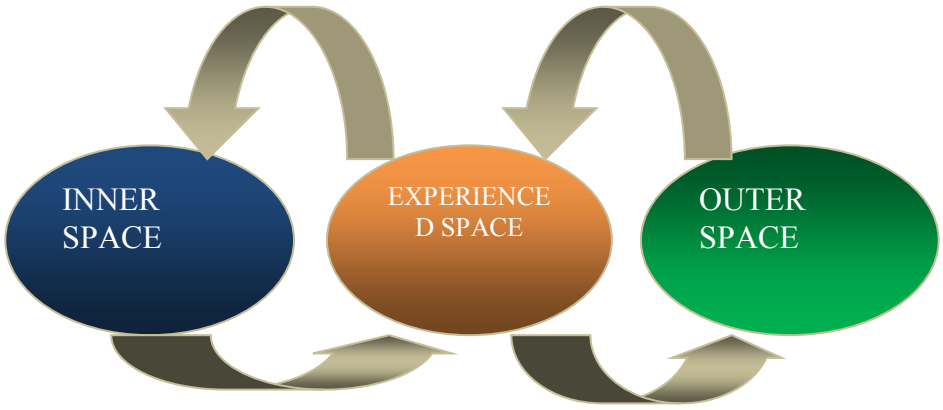

Figure 1: Outer, Experienced and Inner spaces.
Source: Van den Berg (2007).

Outer space is the real space that can be described objectively. Inner space is the state of mind of each individual person, including his or her previous experiences, preferences and mood.

According to Van Den Berg (2007) inner and outer space are connected by means of experienced space, which could be described as the individual perception of real outer space. Based on her review, Van Den Berg (2007) concludes that the way a space is experienced has more effect on behaviour than the objectively measurable characteristics of that space.

Similarly the physical features of the site can also have meanings which go beyond their material functionality. What they are made of, the forms chosen to express them, the style in which they are designed and how they are located can all exploit their wider symbolic values. The appropriateness of the design language chosen and materials and detailed used to express it is also an important further tool through which the story which a design is intended to tell can be made more convincing. Self-conscious attempts at 'landmark' design may be inappropriate in a low key or rural setting for example. Such approaches can even include the integration of areas within the space in question which are consciously un-designed (Svetlana et al, 2012).

3.0 METHODOLOGY

Jos Metropolis covers Jos North and Jos South Local Government Areas (figure 2) (the Jos Metropolitan Development Board Edict No. 5 of 1974).**The study areas covered five neighbourhoods identified from a total of eight selected urban centres within Jos metropolis They include Anglo Jos, Tudun Wada, Tafawa Balewa, Vander Puye and Zaria Crescent.**

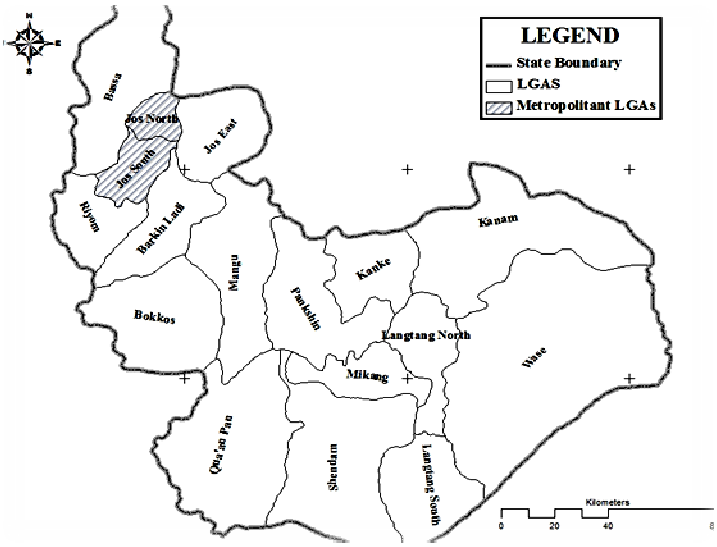

Figure 2: Jos Metropolitan Local Government areas
Source: Unijos GIS Laboratory.

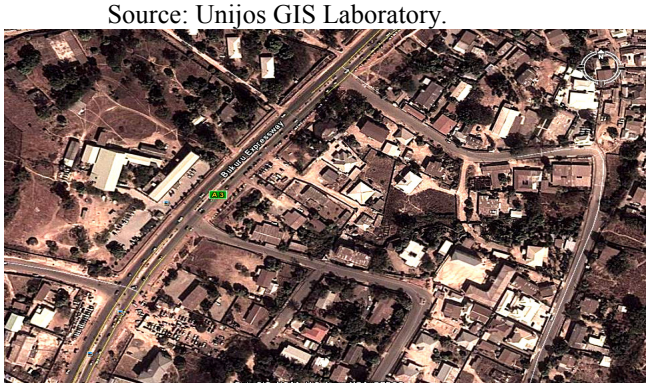

Plate I aerial view of Anglo-Jos. Source: Google earth image.

Plate II aerial view of Tudun Wada. Source: Google earth image.

Plate III aerial view of Tafawa Balewa and Vander Puye. Source: Unijos GIS Laboratory

Plate IV aerial view of Zaria Crescent. Source: Unijos GIS Laboratory

3.1 Sample Size for the Study

Sample size refers to the number of respondents in a group and making inferences about the whole. The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample with an established level of confidence and margin of error. (Strategic Research, 2011 Annual Report).

The sample size for the survey was determined from the required sample size table (see table 1 prepared by Cochran (1977) and Kre-jcie & Morgan (1970) with the total population of 7,500 as the total population size of the study areas in the first column and cross-referenced with 95% level of confidence and 5% margin of error. Cited in Sati, 2015.

Table 1 Required Sample size table

Population Size	Confidence = 95% Margin of Error				Confidence = 99% Margin of Error			
	5.0%	**3.5%**	**2.5%**	**1.0%**	**5.0%**	**3.5%**	**2.5%**	**1.0%**
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	278	440	606	906	399	575	727	943
1,200	291	474	674	1067	427	636	827	1119
1,500	306	515	759	1297	460	712	959	1376
2,000	322	563	869	1655	498	808	1141	1785
2,500	333	597	952	1984	524	879	1288	2173
3,500	346	641	1068	2565	558	977	1510	2890
5,000	357	678	1176	3288	586	1066	1734	3842
7,500	365	710	1275	4211	610	1147	1960	5165
10,000	370	727	1332	4899	622	1193	2098	6239
25,000	378	760	1448	6939	646	1285	2399	9972
50,000	381	772	1491	8056	655	1318	2520	12455
75,000	382	776	1506	8514	658	1330	2563	13583
100,000	383	778	1513	8762	659	1336	2585	14227
250,000	384	782	1527	9248	662	1347	2626	15555
500,000	384	783	1532	9423	663	1350	2640	16055
1,000,000	384	783	1534	9512	663	1352	2647	16317
2,500,000	384	784	1536	9567	663	1353	2651	16478
10,000,000	384	784	1536	9594	663	1354	2653	16560
100,000,000	384	784	1537	9603	663	1354	2654	16584
300,000,000	384	784	1537	9603	663	1354	2654	16586

Source: Research Advisors, 2006

The population figures of the study areas of Anglo Jos ward, Tudun Wada ward, Tafawa Balewa Ward, Vander Puye Ward and Zaria Ward show that total population figure of study areas was 7500 as shown in table2. With a confidence level of 95% and a margin of error of 5%, the required sample size from table1 was 365 cited in Sati, 2015

Table 2: Population Distribution of study Areas.

S/No.	Ward	Population
1	Anglo Jos	1,250
2	Tudun Wada	1,950
3	Tafawa Balewa	1,400
4	Vander Puye	1,200
5	Zaria Crescent	1,700
Total		**7500**

Source: Independent National Electoral Commission.

From table 2 the population figures of the study areas showed that out of the total population figure of 7500, Anglo Jos was 1,250, Tudun Wada 1,950, Tafawa Balewa, 1400, Vander Puye, 1200 and Zaria Crescent 1700.The number of respondents for each ward was determined by the ratio of the figure of each ward and the total population and multiplied by the required sample size of 363, cited in Sati 2015.

3.2 Procedure and Instruments for Data Collection

The field survey was carried out by in the study areas using structured interview. A total of 365 respondents were surveyed representing different demographic and socio-economic status. The survey was carried out with research assistants who were trained in the modus operandi and protocol of interview and were administered to respondents on the basis of First- to- Meet or First- to- Appear as it was used by (Miyan, 2003 and Sati, 2015).

4.0 DATA PRESENTATION

The data presents results and discussions of analysis from field study carried out at five selected neighbourhoods of Jos metropolis; Anglo-Jos, Tudun Wada, Tafawa Balewa, Vander Puye and Zaria Crescent.

3.1 Comparative Results and Analysis of Structured Interviews for Respondents' perceptive and interpretations of components of architectural composition of the study Areas.

Findings from the respondents with the result in table 3 show that majority of respondents in Anglo-Jos, 28 respondents, representing 46.6%, perceive and interpret synthesis; in Tudun Wada, 29 respondents, representing 30%, also perceive and interpret synthesis; in Tafawa Balewa, 20 respondents, representing 29.5%, perceive image-ability also in Vander Puye, 18 respondents, representing 33.9%, perceive image-ability and in Zaria Crescent 31 respondents representing 36.9% perceive organisation as regular mental images of elements of architectural composition.

Table 3 Overall Mental Image of Element of Architectural Composition

	Anglo Jos Sample Size (60)		**Tudun Wada Sample Size (97)**		**Tafawa Balewa Sample Size (68)**		**Vander Puye Sample Size (57)**		**Zaria Crescent Sample Size (83)**	
	Frequency	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
Synthesis	28	46.6	29	30	17	25	07	13.2	11	13.1
Organisation	10	16.6	20	20.2	07	10.3	10	18.8	31	36.9
Order	10	16.6	19	20	14	20.6	14	26.4	10	11.9
Image-ability	02	3.6	10	10.3	20	29.5	22	33.9	19	22.6
Legibility	05	8.3	14	14.4	04	5.8	04	7.5	05	7.1
Identity	05	8.3	05	5.1	06	8.8	07	13.2	08	9.5
Total	**60**	**100**	**97**	**100**	**68**	**100**	**57**	**100**	**83**	**100**

Source: Author's Field Survey

.Findings from the respondents with the result in table 4 show that majority of respondents in Anglo-Jos, 20 respondents, representing 33.5%, perceive organisation; in Tudun Wada, 40 respondents, representing 41.5%, perceive organisation; in Tafawa Balewa, 14 respondents, representing 20.5%, perceive synthesis; in Vander Puye, 10 respondents, representing 18.8%, also perceive synthesis and in Zaria Crescent, 44 respondents, representing 52.3%, perceive legibility as one aspect of elements of architecture most frequently recollected.

Table 4 One aspect of Elements of Architecture most frequently recollected

	Anglo Jos Sample Size (60)		Tudun Wada Sample Size (97)		Tafawa Balewa Sample Size (68)		Vander Puye Sample Size (57)		Zaria Crescent Sample Size (83)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Synthesis	10	16.6	18	18.5	14	20.5	10	18.8	12	14.2
Organisation	20	33.5	40	41.5	05	7.4	04	7.5	06	7.1
Order	11	18.3	12	12.3	06	8.8	06	11.3	10	11.9
Image-ability	08	13.3	11	11.3	05	7.4	05	9.4	08	9.5
Legibility	06	10	09	9.2	30	44.1	27	43.3	44	52.3
Identity	05	8.3	07	7.2	08	11.8	05	9.4	03	4.7
Total	**60**	**100**	**97**	**100**	**68**	**100**	**57**	**100**	**83**	**100**

Source: Author's Field Survey.

Findings from the respondents with the results in table 5 show that majority of respondents in Anglo-Jos, 29 respondents, representing 48.5%, perceive organisation; in Tudun Wada, 38 respondents, representing 39.2%, perceive organisation; in Tafawa Balewa, 22 respondents, representing 32.3%, perceive synthesis and order; while in Vander Puye, 11 respondents, representing 20.7%, perceive order and also in Zaria Crescent, 30 respondents, representing 35.7%, perceive order as one aspect of elements of architecture most frequently recollected.

Table 5 The Element of Architectural composition perceived as most aesthetically pleasing

	Anglo Jos Sample Size (60)		Tudun Wada Sample Size (97)		Tafawa Balewa Sample Size (68)		Vander Puye Sample Size (57)		Zaria Crescent Sample Size (83)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Synthesis	10	16.6	20	20.6	11	16.1	10	18.8	08	9.5
Organisation	29	48.5	38	39.2	04	5.7	04	7.5	20	23.8
Order	05	8.3	17	17.5	11	16.2	11	20.7	30	35.7
Image-ability	05	8.3	08	8.3	05	7.4	05	9.4	14	16.6
Legibility	06	10	05	5.2	07	10.2	03	5.6	09	10.7
Identity	05	8.3	09	9.2	30	44.1	24	37.7	02	3.6
Total	**60**	**100**	**97**	**100**	**68**	**100**	**57**	**100**	**83**	**100**

Source: Author's Field Survey.

Findings from the respondents with the result in table 6 show that majority of respondents in Anglo-Jos, 20 respondents, representing 33.6%, perceive order; in Tudun Wada, 40 respondents, representing 41.2%, perceive order; in Tafawa Balewa, 28 respondents, representing 41.1%, perceive organisation; while in Vander Puye, 33 respondents, representing 62.2%, perceive synthesis and in Zaria Crescent, 44 respondents, representing 52.5%, perceive organisation as a feature of architectural composition to be remembered ad infinitum.

Table 6 A feature of Architectural composition to be remembered ad infinitum

	Anglo Jos Sample Size (60)		Tudun Wada Sample Size (97)		Tafawa Balewa Sample Size (68)		Vander Puye Sample Size (57)		Zaria Crescent Sample Size (83)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Synthesis	08	13.3	10	10.3	04	5.8	37	62.2	05	5.9
Organisation	10	16.6	17	17.5	28	41.1	23	43.3	44	52.5
Order	20	33.6	40	41.2	06	8.8	08	15.1	12	15.5
Image-ability	07	11.6	09	9.3	07	10.3	06	11.3	06	7.1
Legibility	07	11.6	11	11.3	03	4.4	09	16.9	11	13.1
Identity	08	13.3	10	10.3	05	7.3	03	5.6	05	5.9
Total	**60**	**100**	**97**	**100**	**68**	**100**	**57**	**100**	**83**	**100**

Source: Author's Field Survey.

All the analysis were put together to give interpretations to the findings

5.0 DISCUSSION

The discussion presents results obtained from the survey in selected urban centres of Jos metropolis, investigating how they perceive and interpret the environments in the study areas of; Anglo-Jos, Tudun Wada, Tafawa Balewa, Vander Puye and Zaria Crescent.

The ripostes of respondents from the five study areas show that in each urban centre there is a preponderance or a dominance of a specific or a particular parameter of the component of architectural composition that are employed as intellectual tools and are allowed to elicit the desired meaning, interpretation and reaction both by respondents and spectators.

The overall mental image of the component of architectural composition in Anglo-Jos and Tudun Wada is the synthesis of architectural elements of the areas such as the residential and commercial buildings, green spaces, access roads, street parking and walkways connected or put together in such way they create an urban

entity. They are dissimilar, totally antithetical; but are put in harmonizing ways through a rationale that position them in a supportive way. Architectural Composition of Anglo-Jos has a hierarchy of plaza with a green space such as the Nigerian Tobacco Company (NTC) Garden located at the thoroughfare along Yakubu Gowon Way with residential buildings lined along one side and corporate buildings.

The architectural composition of Tudun Wada is generally made of greenway corridor with a green space such as Solomon Lar Amusement Park that follows a natural trait of a stream valley. It follows a path of an abandoned water dam. It extends between villages and neighbourhood of Sabon Gari in Tudun Wada Ward along Domkat Bali road.

In Tafawa Balewa, Vander Puye and Zaria Crescent, users overall image of architectural composition, shows that image-ability of the environments create images or impressions in the minds of people which they frequently carry. Perhaps, the series of public images or landmarks such as the Jos Township Stadium, Private hospitals, Schools, Worship Centres, Transport Terminus Stations, Commercial centres located in these areas create impressions in the minds of people. Also, in Tafawa Balewa and Vander Puye, the architectural composition is made of hierarchy of residential, commercial and civic buildings clustered around them with access roads to different buildings. A public park called Candy park is located in Zaria Crescent is mostly used for civic gatherings and recreation with a mix of residential and commercial buildings and commercial activities along the park.

Also in Anglo-Jos and Tudun Wada, one aspect of elements of architectural composition most frequently recollected is the organisation of order of architectural elements in the vicinities which convey a balance being achieved from the general organisation of buildings, access roads and green spaces.

In Tafawa Balewa, Vander Puye and Zaria Crescent, the aspect of elements of architectural composition most frequently recollected is the legibility of architectural elements of the environs in directing the whereabouts of the streets, buildings, access roads and green spaces which are not confusing, but are easy to understand.

The elements of architectural composition perceived as most aesthetically pleasing in Anglo-Jos and Tudun Wada areas are the hierarchy among the organisation of architectural components. The establishment of hierarchies among the components with the architectural composition made of hierarchy of residential, commercial and civic buildings clustered around different streets with access roads to different buildings and that resulted in the order of the neighbourhoods.

The elements of architectural composition perceived as most aesthetically pleasing in Tafawa Balewa, Vander Puye and Zaria Crescent areas is the identity with the unique activities such as the commercial and sports activities due to the presence of commercial centres and the major sports arena in the core area of Jos metropolis.

The feature of architectural composition to forever be recollected in the five study areas are the order and organisation of architectural elements of the areas.

6.0 CONCLUSION AND RECOMMENDATIONS

The perception and interpretations of the components of architectural composition are an essential tools for the understanding of urban built environment with the findings that are established as benchmarks that described how perception and interpretations of the components of architectural composition affects the quality and prolonged existence of urban centres of Jos metropolis. Therefore, the outcome of the investigations provides a basis for notional significance, perceptual awareness, and planning instruments that can sustain the improvement and development of infrastructure and resources of the built environments of Jos urban centres and perhaps Nigerian urban centres.

The study therefore, recommends that:

With the data acquired, policy makers, architects, urban designers and planners should get on board on a more comprehensive planning, upgrading or redevelopments of urban centres to make them better for human regeneration and wellbeing.

To accomplish a wealthier quality of urban built environments of Jos metropolis, architects and planners are duty-bound to put together design tools as well as take into consideration the overall perception and interpretations of components of architectural composition.

REFERENCES

Bonta, J.P. (1979). Architecture and Its Interpretation. New York: Rizzoli International Publications Inc.

Burgess J., Harrison C.M. and Limb M. (2008). People, parks and the urban green: A study of popular meanings and values for open spaces in the city. *Journal of Urban Studies 25(6): 455-473.*

Gihring, T.A. (1975). Urban Imagery in Zaria: *A study of Environmental Perception.*
Savannah Journal, Vol. 4 pp 125-132.

James, P., K. Tzoulas, M.D. Adams, A. Barber, J. Box, J. Breuste, T. Elmqvist, M. Frith, Gordon, K.L. Greening, J. Handley, S. Haworth, A.E. Kazmierczak, M. Johnston, K. Korpela, M. Moretti, J.

Niemelä, S. Pauleit, M.H. Roe, J.P. Sadler, C. Ward Thompson (2009) Towards and integrated understanding of green space in the European built environment. *Journal of Urban Forestry & Urban Greening 8(2009): 65-75*

Kessel, A.A., Burgess, J., Harrison, C.M. and Limb, M. (2009) People, Parks and the Urban Green: A Study of Popular Meanings and Values for Green Spaces in the City. *Journal of Urban Studies. Vol. 25, No. 6. Pg 455-473.*

Sati, Y.C. (2014). User Perception and Use of Greenspaces as Elements of Architectural Composition of Jos Metropolis, Nigeria. An unpublished Ph.D Dissertation Department of Architecture, Ahmadu Bello University Zaria, Nigeria.

Sati, Y.C. (2015). Perception of Green Space as Element of Architecture Composition of Solomon Lar Amusement Park Jos, Nigeria. *International Journal of Research in Humanities and Social Studies. 2(8) PP 72-80.www.ijhrss.org*

Sati, Y.C. (2015). User Perception of Green Spaces in the Context of Architectural Composition of Jos Metropolis, Nigeria. *Journal of Environment and Earth Science. 5(18) PP 74-101.*www.iiste.org

Vander de Berg (2007). Images of Social Change. The Changing Social Structure. Sage, London.