Learning from Tradition: Elements and Practice of Urban Development Control in Zaria City, Nigeria

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Abstract

Pre-modern settlements in developing countries are growing, and like their modern counterparts, there has been increasing call for their proper management and safeguarding of their environment. Monitoring of development and redevelopment is usually a preferred vehicle for control in both old and new settlements which normally coexists alongside emerging metropolis. However, while new settlements met modern rules and regulations; pre-modern cities have long been in existence centuries before European colonizers brought western-style planning regulations to this part of the world. Effective control of developments in pre-modern sectors of emerging metropolis in Nigeria is usually challenged because it lacks suitable rules, guidelines and standards to established adherence or contraventions. This research, through physical and social surveys, using instruments of historical and anthropological research - individual discussions, structured questionnaires, interviews, and Focused Group Discussions (FGDs), was able to establish all these. It was also able to evaluate these standards in use at both settlements to establish the advantages of traditional measures and guidelines over and above modern regulations. Recommendations were on enforcing formal development control activities in traditional communities which were though founded on these rules but due to long neglect now appear align to many of their inhabitants.

Keywords: building control development standards tradition

Introduction

To promote orderly development, physical planning ensures that urban activity is properly guided. Disorderly development has cost and health implications, and development control is the planning instrument that pre-empts both. Many studies have shown how active the practice of Development control is in the modern areas of third world cities as compared to the traditional areas (Mabogunje, 2005 and 2008; Afon, 2007). The consequences from such vacuum are also shown, including the need for reversal (Mabogunje, 1999; Kawu, 2005; Afon, 2008; Kawu and Shaibu, 2008, Siemens, 2011). Instituting action however has limitations from two factors. First, it is the generally held belief that development control lacks basis for enforcement in traditional areas as modernist ideology of urban planning presupposes that development control derives legitimacy from a planning scheme, which in the case of traditional areas is lacking (Kaltho, 1985; Santuraki, 2001). Second, is the technical argument that even where the basis for enforcement is found in a planning scheme, modern planning standards are not generally suitable for application in traditional areas, if the overall result was not to be disordered and chaotic, but rather to enhance livability in all urban settings as expected in the context of a wider sustainable urbanism (Oyesiku, 1998; Abdo and Batzel, 2011; Barnett, 2011; Campanella, 2011).

The need to improve traditional areas on the basis of traditional development control instruments is an option rarely explored (Chapin 1972; Keeble, 1972; Akubor, 1985; Baba, 1990), but one with special appeal for sustainable development (Benison and Gascoigne, 2007; Siemens, 2011). As the traditional measures of control are not documented, and as they have been unfairly portrayed in the literature (Baba, 1990), a need exists for identification and analysis towards integration into modern planning literature and practice.

This paper contributes in this direction. The argument is that traditional planning control elements are rich and should be integrated with formal planning instruments in redeveloping traditional areas of cities. What are these elements and their measures and how do they compare to contemporary standards? This article examines the traditional development control system and elements in Zaria city and their usefulness. The objective is to show that modern and traditional practices of Development Control have similarities, and can be complementary in enhancing the practice of urban planning.

The Study Context and Methodology

The best urban example (of traditional settlement) in northern Nigeria is Zaria because it contains a complete range of planned urban landscape units and unlike Kano, has not seen the blurring of many of the units through rapid growth. Again, *Birnin Zaria* is an excellent case study of a walled Hausa-Fulani city because so much of its urban landscape can be related to traditional ways of planning. The walled part of the city, with which we are concerned in this work, has retained much of its indigenous character especially since most recent growth has taken place outside it, Urquhart (1977), Sani (1985). The indigenous Hausa – Fulani tribe mainly inhabits Zaria traditional walled city; non-natives, in the past, reside outside it in places like Sabon Gari, Tudun Wada and Samaru, etc. This has safeguarded the area as a symbol of traditional settlement with its indigenous landscape and architecture intact. *Birnin Zaria* is divided into four (4) main wards: Kwarbai, Juma, Iya and Kaura wards. These are further subdivided into 41 wards or Unguwoyi. One of these wards is unguwar Kwarbai also known as *Unguwar Limamin Bai* or *Mai Gamo*, Urquhart (1977).

According to some traditions, Zaria was founded as capital of the old Hausa kingdom of *Zeg Zeg (Zazzau)* in about 1536. The city has served as a political, administrative, and market centre for several hundred years. The physical expression of the city is through its walls; roads and paths, the market place, the mosque and the emir's palace. A wall circumscribes the town containing large area of agric land, often attributed to the need to secure food supplies in times of siege, and to provide refuge for large numbers of people. The wall was probably as important in peace time as in war for they allowed the control of trade (Smith, 1969), and the collection of dues by the "*Sarkin Kofa*" (gateman) at each of a number of entry points which were secured at night. The market, a mile south-west of the mosque, has a long history, first as a slave market, and later as a centre of trade in local goods and traditional needs. Connecting both the market and the mosque with each of the eight gates, and with each other, are two networks of radiating paths, which impose the basic urban pattern on the city.

The farmers, officials, traders, craftsmen and labourers of *Birnin Zaria* live in walled compounds composed of many sections, mud-brick huts and houses. Internally orientated to ensure privacy, these compounds press close upon the roads and paths. Packed tightly only around the market and main roads, the groups of compounds are separated by paths and ditches, borrow pits, occasional small mosques or praying grounds, as well as farmland. Agriculture was the largest user of city land. Mostly fertilized and cultivated annually, the farmlands of city-dwellers extend over two miles to the south and west of the city walls. The skyline of the city until recently is low and nearly level; the compounds are brown splotched with whitewash; and the farmland, uniquely Zarian, green or browning fields with scattered baobab and giant, closely pruned silk cotton trees.

In recent times the form of *Birnin Zaria* has changed little although roads have been built for use by cars and lorries, schools have been added, and rich traders have built storey houses near the market and along the major roads, the automobile has been allowed to force its way into the domain of the pedestrian and donkey. These developments are pointers to the needs to evolve measures to deal with changing trends. Piped water has not succeeded in replacing well water and electricity is still a prestige item. *Birinin Zaria*, constricted by old urban forms, largely retains its pre-colonial character. Even by modern criteria, *Birnin Zazzau* has had an urban status long before colonial rule. This is by virtue of its size, its political and regional importance, and the diversity and magnitude of its non-agricultural functions. The city has a rather steady population growth as against its surrounding environment.

Population increased rather slowly, mainly through natural increase reaching totals of 32,600 in 1952/53, 34,900 in 1960 and about 40,600 in 1968. That is, an average growth rate of approximately 1.5% per annum, Schwerdtfeger (1980). Present estimate of the population of the area is about 69,600.

The study adopted use of both primary and secondary data. Primary data was derived through field surveys using a structured questionnaire, while secondary data was obtained from published and unpublished sources. With average household size of 14; a hundred questionnaires were administered to cover 2% of the residents of the city. Questionnaire administration was based on the systematic random sampling technique; which assigns a questionnaire to the fifth household on the street. These are administered on each household head or any adult male member of the house present at the time of the survey. The main questions asked were on the socioeconomic character of the people to gauge their opinions: and with assessing the environment through physical measurements of the various components of the house. Quantitative statistics like regression and correlation analysis were used in the data analysis especially to compare set of data collected.

The Traditional Practice of Development Control in Zaria

In Pre-modern times, Development Control in Zaria was a community responsibility defined at 3 levels. First, each member of the society is a monitor, making reports of contraventions to the representatives of the traditional leadership institutions. Contraventions are held as developments capable of undermining public health, safety, Amenity and convenience. The second is with professional builders, who are not only skilled in construction, but are also knowledgeable of the built environment. The third, fourth and fifth enforced by the *Mai Anguwa,* the emir and during colonial times, the courts. The builder or the head of the guild of builders (*Sarkin Magina*) is usually first notified of contraventions, and following assessment, appropriate amendments are sought for compliance by the developer. However, mediation by the guild is rarely required as most people are aware of development requirements. Where mediation fails, a report is raised to the community leadership (*Mai-Anguwa*). An unresolved case is forwarded to the ward or District head (*Hakimin Birni da Kauye*). The emirate council presided by the emir is usually the final arbiter. Rarely are cases taken to the court, but where it does, the court becomes the final arbiter.

In Zaria, as it is across northern Nigeria, the emir holds land in trust for the community and leasehold is given to individuals under specified conditions of use. Based on this, haphazard layout and improper developments are rarely common. Town form is defined first by public spaces, and private areas afterwards under strict compliance to cultural norms. That is, individual interests for development usually are bound by common traditions, technology, welfare means, security needs, transportation, and religion (Kaltho 1985). The planning considerations although unwritten, are practiced and transmitted across generations through the guild of builders under authority of the emir. Generally, Development control begins from land acquisition. In the case of purchase, the buyer secures three witnesses. Along with the seller, written agreements are made with the endorsement of the *Mai Anguwa* (ward head) or at times the District Head (*Hakimin Birni da Kewaye*), whose main concern at this stage, is the particular use for which the land would be put to. During development, control is about building form and use, as it affects neighbourhood circulation and privacy. Within the house, space use is a private affair of the developer, but the guild of builders generally exercise advisory roles on housing elements and dimensions. Between houses, Development control ensures that buildings do not intrude into adjacent plots and that required setbacks are respected.

At the individual developer's level, the size of the plot to build on, the number of rooms to be built, and their sizes are influenced by the financial strength of the developer and the functions rooms are intended for. The local authorities have no control over this, except where it invades the privacy of neighbours, as for example when doors or windows are placed opposite the toilet or bathroom of a neighbour (usually unroofed), or erecting high structures that give visual contact to the courtyard of neighbours. For this reason, construction of storey buildings are rarely permitted. In *Anguwan Kaura* for instance, no such building exists until recently. The principle of convenience is promoted at the neighbourhood level relating to circulation, privacy and amenity. Functionality is achieved by ensuring that enough spaces for passages, alleyways and drainages are provided; Privacy is promoted by ensuring that alleys, entrances or parlours do not face one another; and amenity, by ensuring that buildings do not encroach onto roads or alleyways or onto open recreation or public spaces. Health considerations are expressed in the provision of passages for storm water and for waste evacuation.

Elements and yardsticks for Development Control in Zaria City

The built form of Zaria city is a transcript of un-written rules regarding the construction of housing and community infrastructure. In the cultural environment of Zaria traditional house consisted of four functional spaces: the living room (*Zaure*), the privy, the bedroom, the kitchen, and the courtyard. The number of rooms and the functions rooms play are a choice of the developer, but subject to a minimum of one bedroom, a bathroom and toilet, and a kitchen. The housing elements are guided by minimum, desirable and maximum yardsticks. The average size of a living room (*Zaure*) is 15.3m^2. The maximum is 30m^2 and the minimum is 5m^2. The floor area of the privy ranges between 1-2m^2 and the toilets 6m^2. The average size is 3.0m^2 and the minimum is 1.0m^2 (See table 1).

Table 1: Dimensions of the living room and the privy

	Zaure (Parlour) Area (m^2)				Bathroom		Toilet	
		No	%	Areas (m^2)	No	%	No	%
	5-10	40	40	1-2	35	35	40	40
	11-20	30	30	2.1-3	20	20	20	20
	21-30	30	30	3.1-4	10	10	25	25
				4.1-5	15	15	5	5
				5.1-6	20	20	10	10
Total		**100.0**	**100.0**	**Total**	**100.0**	**100.0**	**100.0**	**100.0**
Summaries								
Average	15.3			3.2				2.8
Minimum	5.0			1.0				1.0
Maximum	30.0			6.0				6.0

Source: Field Survey Aug'04

Bedrooms have dimensions of between 3-4m in length and 2-3m in breath, and a floor area of between 4-15m^2. The average floor area is about 7.0m^2 and the maximum is 15m^2 (See table 2).

Table 2: Dimensions of the Bedroom

		Length		Breadth		Area		
	Meters	**No**	**%**	**No**	**%**	**(m^2)**	**No**	**%**
	2-3	20	20	70	70	4-5	10	10
	3.1-4	80	80	20	20	5.1-10	80	80
	5.1-6	-	-	10	10	11-15	10	10
	Total	**100**	**100**	**100**	**100**	**Total**	**100**	**100**
Summary (m)								
Average		3.3		3.0		7.0		
Minimum		2.0		2.0		4.0		
Maximum		4.0		6.0		15.0		

Source: Field Survey Aug'04

The small size of the bedroom derives from the limited range of activities it accommodates. The living room in comparison, takes larger area being the space of highest activity in the house. The courtyard is emphasized in almost all houses. They are enclosed spaces that are used for various functions. Enclosed spaces can be equated with courtyards in planned areas. In Zaria city, courtyards of 3x 6m are dominants. The total area coverage ranges from 5 to 30m^2, with 10.9m^2 as average and 4.0m^2 as the minimum (See table 3).

Table 3: Dimension of enclosed courtyards

Areas (m^2)	No	%	Summary (m^2)
4-5	30	30	Average 10.9
5.1 – 10	20	20	Minimum 4.0
11-20	25	25	Maximum 30.0
21 – 30	10	10	
NA	15	15	
Total	**100**	**100**	

Source: Field Survey Aug'04

Building height is subject to development control, and until recently, rarely exceeds 4.8m. As a privacy control measure, storey buildings where found, are under 6m. Walls and fences are about 2-3m high for security reasons (See table 4).

Table 4: Height of Buildings

Heights (m)	Building		Walls	
	No	**%**	**No**	**%**
1 - 2	-	-	5	5
2.1 - 3	-	-	85	85
3.1 - 4	10	10	-	-
4.1 - 5	50	50	5	5
5 - 6	35	35	-	-
NA	5	5	5	5
Total	**100**	**100**	**100**	**100**
Summary (m)				
Average	4.8		2.5	
Minimum	3.0		2.0	
Maximum	6.0		3.0	

Source: Field Survey Aug'04

Provision of public spaces and infrastructure are also guided by specific development control guidelines. The application is to circulation routes, open spaces, drainage lines, etc. Circulation is defined by Alleyways and roads. Alleys are predominant due to low ownership rates in early times. Alleyways can be compared with walkways or paths in the planned areas. The dominant size of an alley is between 3-5m. The minimum size is 2m and the maximum is 6m (see table 5).

Table 5: Dimension of Alleyways

Width (m^2)	No	%	Summary (m^2)
2-3	10	20	Average 4.2
3.1-4	30	30	Minimum 2.0
4.1-5	45	45	Maximum 6.0
> 5	15	15	
Total	**100**	**100.0**	

Source: Field Surveys Aug'04

Roads are un-tarred single carriageways, and many are cul-de-sacs. Carriageways are between 4-5m, and the minimum and maximum widths are 2m and 6m respectively. Buildings are aligned to public spaces and infrastructure based on defined setbacks. The average for front setbacks is 3.2m, and 1.6m and 6.0m as minimum and maximum respectively. The majority of setbacks lie within 2-3m, which is about the same recommended for improvement of substandard housing areas in the formal and planned areas. The side and rear setbacks are lower than the figures for frontages. The strips of land between buildings are used as passages and corridors for drainage and utility provision. Open spaces are secured for various public functions. The most common function is recreation (85%), grazing (10%) and as dump site (5%).

Table 6: Assessment of Out-door Open Space

	Length (m)		Breadth (m)		Area (m^2)			Uses		
	No.	%	**No.**	**%**	**M^2**	**No.**	**%**		**No.**	**%**
< 5	10	10	10	10	< 50	15	15	Play field	85	85
5 – 10	90	90	40	40	50-200	75	75	Graze land	10	10
11-20	0	0	50	50	700-100	10	10	Refuse dump	5	5
Total	**100**	**100**	**100**	**100**		**100**	**100**		**100**	**100**
Summary (m^2) Average 185.5, Minimum 40.0, Maximum 1000.0										

Source: Field Survey Aug'04

Comparing tradition and modernity

The statistical comparison between contemporary and modern planning standards and the findings is shown in table 7. It indicates a difference between planning standards used by the urban Development Authority like Kaduna State Urban Planning and Development Authority (KASUPDA), to control development and what obtains as traditional practice in Zaria city. Only in the case of rear set backs are there identical figures.

Table 7: General Assessment

Components	Planning Standards (x)	Traditional Dimensions (y)	Variation
Parlour/Zaure	10.8	15.3	+ 4.5
Bedroom	10.8	6.3	- 4.5
Courtyard	9.3	10.9	+ 1.6
Bathroom	2.7	3.2	+ 0.5
Toilet	1.8	2.8	+ 1.0
Front setback	2.5	3.2	+ 0.7
Rear setback	1.5	1.5	0
Side setback	3.0	1.5	-1.5
Road width	7.0	4.5	- 2.5
Alley width	3.0	4.2	+ 1.2
Building height	3.0	4.8	+ 1.8
Wall/fence height	2.0	2.5	+ 0.5

Source: Field Survey, Aug.'04

In most of the cases, the traditional instruments have higher measures than the modern. The variations (about 30%, using correlation coefficient and coefficient of determination) may account for the relative comfort in these areas. The most striking difference from table 7 is in the size of the *Zaure* (parlour). The average *Zaure* is about 50% larger than in the formal planned areas. This, as the survey reveals, is due to the number of activities taking place in this part of the house. Whereas in the modern areas eating and relaxation are the main activities taking place in a parlour, the *Zaure* in addition is used to entertain guests, hold family meetings, and as a place for local craft, reading / teaching as in the case of Qur'aanic or Islamiyya schools. Another difference is in the average size of the bedroom. Bedrooms in the traditional setting are small on the average, because they are strictly areas of private activity, as the *Zaure* has taken many group, communal, household or even entrepreneurial functions of the family.

In-door open space is common in most of the houses sampled and with different uses to all members of the household. The privy/toilet and bathroom on average, are relatively larger, (up to $6m^2$), whereas the modern standards recommend only $1.8/2.5m^2$ and $2.7/3.2m^2$ as minimum/desirable dimensions respectively; or $3.7/4.5m^2$ when they are combined. Roadways are relatively smaller, but the alleys which can be equated with pathways or walkways, are on the average wider. Walkways are the easiest and the most dominant route for transportation in the area. These further explain the reason for the narrow roads.

In the regression analysis, r = 0.833, and 't' value (i.e. calculated t) is 4.761. That tabulated 't' (tab. 't') is 1.718 at 0.05 (5%), means that there is a significant difference in planning standards between contemporary and traditional areas. The correlation coefficient used here is a measure of the association between two variables and the matrix gives the correlation between two variables for all possible pairs of variables. Whatever the units in which x and y are measured, then a positive r-value indicates that x and y are positively related, and the closer the value to + 1, the stronger the relation. A negative r-value indicates a negative statistical relation, and the closer the value to -1, the stronger the relation (Harry and Althoen 1995). This variation was further analyzed using the coefficient of determination which is the correlation coefficient squared (r^2). This describes the amount of variation in the dependent variable that can be explained by its association with the independent variables' (Gregory 1973; Ukoje 2004). Using the coefficient of determination so derived, by taking specifications of the modern planning standards as x, (independent variable) and figures of the traditional areas as y (dependent variable), the amount of variation between these values reaches 30.65%. That is, there is only about 69.35% of correlation. This means that the modern standards could be above 30% behind traditional specifications.

Making traditional tools count

Some of these traditional figures are quite large or small, e.g. the privy, narrow roads and set back or even a complete absence of set backs in some cases. This can endanger accessibility and convenience if adopted without necessary modifications. The adjustment is also necessary to meet the growing challenges of high population growth and its demands on space and mobility. Other reasons for this modification and adjustment can also be attributed to the shift in the economic base of the settlement. One aspect of economic changes (in traditional settlements) since colonization is dwindling of indigenous crafts. This means that residential premises are no longer extensively associated with industrial activities, Kaltho (1982). As Spikowski (2003) pointed out, 'one goal of residential design is to extend, the local building tradition, enhance the character of residential streets and neighbours, and encouraging traditional building forms that reinforce the pedestrian orientation and neighbourly quality of the town'. Hence, an examination of both traditional and modern specifications is made here with the aim of bringing out the dimensions that would safeguard health, economy, convenience, safety and the general amenities of urban living.

a. Building Set Backs

Those setbacks especially front and rear ones that are less than 1.5m are too small. Although the rear set backs are not so common as houses are the compound type, many structures share the same wall and fence. However, for greater accessibility, safety from fire outbreak, collapse of structures, etc, set backs should be encouraged. This should also be extended into compounds and even areas outside the house, and in addition, to guide against intrusions into roadways and alleyways. Hence, the recommended adoption of modern figures for the front set back and the traditional specifications for the sides, can be useful as a channel for household drainage, and also as passage way.

b. Roadways and Alleyways

For the alleys the traditional specifications is recommended due to the fact that the people use these facilities as the main route of access between compounds. For the roadways, this is an area with less use of cars especially within its main area, with many cul-de-sacs and alleyways. For main roads, modern specifications are adopted but; for the internal linkage, the traditional measures would be retained at least for the old areas. Attention should be focused on the reduction of activities or intrusion into roadways, avoidance of improper parking of vehicles etc., to avoid congestion and inaccessibility.

c. The Parlour

Except for the gathering of people during ceremonies, other issues that justify the dimensions of the *Zaure* in traditional settlements are changing. For example, the building technology, the issues of trading, vocational works and even the teaching of the Qur'aan are continually finding other spaces outside homes. This reflects the need to change and adapt to modern needs and the subsequent adoption of modern standards in this respect.

d. The Bedroom

The traditional dimension of a room is small by modern standards. However, the main issue here is still privacy and furniture, which is still the bed/mat or space for prayers and reading. Hence, a space of $10.3m^2$ by modern standards appears too big. However, the minimum space for a bedroom; going by these principle/demands could even be lower than the traditional figures. Therefore, the indigenous values would be more appropriate here especially if the structure is of indigenous material and architecture.

e. Building, Wall and Fence Heights

The local building height here is quite above that of the modern standards. This is, to ensure privacy and security of women in the houses who are in purdah. In most cases, modern dimensions on fence height do not totally screen out passers-by from piping into the house, a habit many household heads and the general community seriously oppose.

f. The Privy

Pressure on land and the need to have multi-floor structures to accommodate people and human activities have presented a challenge to the traditional specifications on toilets and bathrooms. Again, improvements and advancement in medicine and sanitations has also brought in further relief, thereby necessitating the adoption of modern specifications for these areas.

g. Indoor Open Space

What dictates the use of space within a house is very much hinged on culture and the tradition of the household. For Zaria city, indoor space is an integral part of the house design and architecture that are influenced by socioeconomic variables. To import a new and alien dimension into this environment would be a total negation of people's culture and needs.

h. Outdoor Open Space

Outdoor open space in traditional areas has a lot of emphasis. Apart from cultural and social obligations, economic use of this space has also added another meaning to this land. As Sani (1985:68) pointed out, the factors behind the adoption of open spaces relate essentially to the need for social interaction and for religious, economic and cultural activities. Hence it would be very difficult for one to change the present dimension of this space since the culture and uses that warrants their existence is still intact.

Table 8: Recommendation Development Control Standards

Components	Minimum (m/m^2)	Desirable (m/m^2)
Parlour /Zaure	10.8	16.2
Bedroom	6.3	7.0
Courtyard	4.0	10.9
Bathroom	2.7	3.3
Toilet	1.8	2.2
Front setback	0.5	3.0
Rear setback	1.5	3.0
Side setback	0.5	1.5
Road width	7.0	15.0
Alleyways	2.0	4.2
Building height	3.0	4.8
Wall/fence height	2.0	2.5

Source: KASUPDA and Field Survey

Conclusion

The traditional areas already exist long before modern planning and development control. The standards in effect are what the people especially the guild of builders work with to achieve enhanced livability. These measurements and dimensions, as in formal planning areas, can be use to control land development, but, in a peculiar approach.
Modern planning standards have the legal backing in enforcing their provisions in a declared planning area and also in dictating not only dimensions but the arrangement of new forms and structures in the area. While the traditional standards can be expected to play a similar role in its domain, it lack legal backing and if it succeeded in getting one, the authorities must remember that the area is already build-up most probably according to these standards. Hence, its enforcement would be much successful if it deals with areas of rebuilding and expansion of structures and in the area of conversion of land uses (as in erecting structures using modern building materials).

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