

---

## **PATTERN OF FENCING AND IMPACTS IN URBAN AUCHI, EDO STATE, NIGERIA**

**Ojeifo Magnus O. and Akhimien Francis O.**

Department of Geography and Regional Planning, Ambrose Alli University Ekpoma,  
Edo State, Nigeria.

---

**Abstract:** *This study examines the pattern and impact of fencing in Auchi, Edo State Nigeria. The objectives among others identified the compliance to fence standards and the role of the planning authorities in the area. Data for this study were generated from primary and secondary sources. Questionnaires, field measurements and interviews were the major tools for data collections. The study observed that very many houses were fenced in the area but the fencing was without observance to building codes and standard. While some fences were constructed right on and over the right of ways, some were seen to be too high. This pattern of fencing was found to be having negative impacts on the development of Auchi. Among the impacts were traffic congestion, accidents, erosion and flooding and poor aesthetics. The study also observed that the planning authority in the area were not up to their responsibility in the control of development in Auchi. Among the recommendations given to correct this pattern of development were urban renewal exercise and the making of a master plan which will comprehensively guide the area for sustainable physical development.*

**Keywords:** Fence, Pattern, Impacts, Urban, Edo, Nigeria

---

### **1.0 Introduction**

The 19<sup>th</sup> century witnessed the increasing modernization of buildings around the world as there was increased utilization of buildings materials borne out of recent technological breakthroughs. Aluminum roofs, windows and doors, bricks and cement blocks, tiles and other metal materials are today used in buildings. The revolution has seen the emergence of all manner of buildings including skyscrapers. While this revolution is very rapid in the developed countries, it has been seen to be slow in the developing countries especially in sub-Saharan Africa. Except in the cities where rapid socio-economic transformation has affected building modernization, the rural areas of Nigeria are still a reservoir of traditional and substandard buildings (Omole, 2001).

A characteristic facility that is commonly found with buildings in Nigeria is the fence. Almost every building especially new ones are usually fenced for several purposes especially security. While this phenomenon has become accepted in building development, it is regrettable that it is been carried out in towns and cities that are not planned. Over 95% of towns and cities in Nigeria are not planned and as a result building including fencing is done without regulation. It is common to see fences erected on sidewalks, drainage and utility lines, street junctions or intersections and along bends. In Auchi, fencing of buildings is not a recent phenomenon; however the rate in the last 2 decades is unprecedented. Unfortunately, these fences are erected with abuse as most of them are erected in a manner that affects traffic, aesthetics, public health and safety. The increase in flooding, erosion and traffic congestion in Nigerian towns and cities has been attributed to the pattern of urban development (Ojeifo, 2005a). This study is essentially to determine the effects of fencing on the rapidly developing urban centre of Auchi.

### **Objectives of the Study**

Following this aim, the objectives of this research includes examining the types and pattern of fencing and determining fence standards and compliance. It also examined the impacts of fencing and the role of planning authority in the study area.

### **2.0 Methodology of Study**

Data for this research were collected using primary and secondary sources. The primary data were collected from the field using questionnaire, personal observation and interview schedule. For the questionnaire, 100

were made and 10 were each distributed in the 10 quarters of Auchi. In each quarter, 5 streets were randomly selected and in each street 2 questionnaires were also randomly distributed and administered on respondent. The questionnaire has two sections. The first section was for house owners/caretakers with fences around their houses. On this a total of 100 house owners/caretakers were interviewed. Questions pertaining to permission to erect fence, size and height of fence as well as the problems created by fencing were asked. The second section was for other residents who were not necessarily house owners, and 2 of such residents from each street, that is, 100 respondents were also randomly administered with the questionnaires. The problems and impact of indiscriminate fencing was the focus of the questionnaire administered on these respondents. With personal observations first hand information especially on the type and the problems fences were creating were identified. Interview schedule was also conducted on the top management staff of the area planning office at Auchi with a view to determining their role in the fencing of public and private buildings in Auchi. As part of data collection, direct field measurement was conducted to determine the distances of fences from right of way and between structures. Also direct count of building with fences was conducted to determine the number of houses fenced in the area of coverage.

Secondary data useful for this study were collected from published and unpublished material including text books, articles in journal, student thesis and the internet. All the data collected were analysed using descriptive method.

### 2.1 Study Area

Auchi is one of the fastest growing urban areas in Edo State. It is located between latitude  $7^{\circ} 10'$  and  $7^{\circ} 20'$  north of the equator and longitude  $6^{\circ} 16'$  and  $6^{\circ} 36'$  east of the Greenwich Meridian. This area is made up of several quarters; they are Abotse, Ibie, Afadokhai, Usogun, Egeroso, Akpekpe, Iyekhei, Igbe, Iyetse and Afobomhe. This area experiences the humid tropical climate, which is characterized by wet and dry seasons. The vegetation of the area is that of the Savannah, with mostly open grassland and few scattered fire resistant trees. The topography is relatively undulating and it slopes from the north of the area to the south. The soil type is the loose sandy soil, which is susceptible to erosion. This type of soil only supports housing development when appropriate measures are put in place. In the 2006 census, the study area had a population of 142,819 people. It has a total land area of 358 Km<sup>2</sup>.

### 3.0 Types and Fence Standards

A fence is a freestanding structure designed to restrict or prevent movement across a boundary (Wikipedia, 2012). Taylor (2012) also defined it as a material constructed with the purpose of filtering sun; obstructing wind; or quieting traffic, noisy neighbours or barking dogs. A fence is generally distinguished by its purpose, for example for security, privacy, to direct movement or to demarcate a piece of real property. Most cities especially in the developed countries of the world have fence codes and guides which set standards for fencing. These standards relate to heights, setbacks, location, depth, colour and materials used. For example the city of Springfield, Oregon and the cities of Rohnert and San Diego City in California United States of America all have fence codes. Rohnert City of California building code requires no permit for fences with less than 1.8m high (City of Rohnert Park Community Development Department 2003). Also, fences built within 1.5m of another property must be made of non-combustible materials and should not be higher than 1.06m at the front and 1.82m at the back. Also the city of San Diego Development Service California has a similar fence code which permit a height of between 1.2m to 1.8metres (Information Bulletin 2009). The City Springfield Development Service Department standards for fences in residential areas allow a maximum height of 6feet and 10feet from any driveway (Springfield Development Service Department, 2009).

In Nigeria fence standards are part of the housing standard requirements. No special permit is usually given for fence erection. The National Building Code has no definite fence code and therefore leaves the erection of fences at the will of developers. However, the code stipulates that no wall is permitted to infringe on the right of way or seen as a threat to the health and safety of residents. It is on the basis of this therefore, that this study investigated violations of these conditions and the impact in the study area.

### 3.1 Types and Distribution of Fenced Buildings in Auchi

Two types of Building fences can be found in Auchi, they are high fences and low or dwarf fences. All the building fences surveyed are made of cement blocks. The high fences carry between 11 and 15 blocks up from the foundation while the dwarf fences carry between 5 and 7 blocks up from the foundation. While some were set without additional materials to their heights, others had broken bottles, barbed wires or American security curled wires or welded rods of iron to complete their heights. The welded rods of iron are very common with dwarf fences in the area. Fences may or may not be cemented or plastered; the cemented ones may or may not also be painted. The heights are generally determined by their owners.

Buildings with fences are found in every location in the study area. They are found among old (traditional) and new (modern) buildings, but are more with modern buildings in the area. Table 1 shows the distribution of buildings with fences among the quarters and selected roads and streets of Auchi.

**Table 1: Number and Distribution of Building Fences**

Quarters	Road/ Street 1	Road/ Street 2	Road/ Street 3	Road/ Street 4	Road/ Street 5	Total No. of Fences	No. of Road/Streets Tarred	No. of Road/streets Untarred
Usogun	5	7	8	4	7	31	2	3
Akpekpe	4	3	4	6	3	20	3	2
Abotse	6	5	9	4	5	29	1	4
Iyekhei	6	2	5	9	3	25	2	3
Igbe	9	7	2	5	7	30	1	4
Ibie	7	5	7	7	4	30	3	2
Afadokhai	7	4	5	4	5	25	1	4
Egeroso	4	7	5	4	6	26	2	3
Afobomhe	5	4	4	6	2	21	1	4
Iyetse	8	6	8	4	5	31	1	4
Total	61	50	57	53	47	268	17	33

**Source: Field Survey, 2012**

In a total of 50 roads/streets surveyed, 268 building fences were counted. Usogun and Iyetse quarters had the highest number of building fences with 31 each while Akpekpe quarter had the least number of building fences with 20. Also only 17 of the roads/streets along which these fences made are tarred while 33 are untarred. While 36% of the fences are dwarf fences, 64% are high fences. The dwarf fences are common with hotels, schools, churches and government institutions. High fences are common with residential and commercial buildings.

### 3.2 Types of Buildings with Fences

The various types of buildings that are fenced in the study area include residential houses, commercial centres, worship centres, government offices, schools, banks, filling station, hotels and vacant land. Table 2 shows the types of buildings with fences.

**Table 2: Types of Buildings with Fences**

Types of Buildings	No. with Fences	%
Residential Houses	169	63
Commercial Centres	7	2.6

Churches	13	4.9
Mosques	9	3.4
Government offices	10	3.7
Schools	12	4.5
Banks	6	2.2
Filling station	13	4.9
Hotels	11	4.1
Vacant land	6	2.2
Hospital	2	0.7
Clinics	9	3.4
Post office	1	0.4
Total	268	100

**Source: Field Survey, 2012**

The Table 3 shows that residential buildings have the highest number of fences in the study area. It accounted for 169 or 63%. This was followed by churches and filling stations which both have 13 or 4.9%. The least types of buildings with fences in the area are hospital and post office which accounted for 0.7% and 0.4% respectively. By these data, residential houses are the most commonly fenced buildings in Auchi. The reason for this is that houses are the commonest elements that increase more often than other facilities due to urban population increases.

**3.3 Purpose of Fencing**

Several purposes were admitted as reasons for fencing buildings in the study area. They include security; restrict undesired movement, control erosion and flood water and aesthetics. In the questionnaires, the respondents were asked to identify from the purposes, one most important factor for fencing. The responses to this are given in Table 3.

**Table 3: Purpose of Fencing Buildings in Auchi**

Quarters	Security	Restrict Incursion	Control Erosion and Flooding	Erosion	Aesthetics	Total
Usogun	11	2	6		1	20
Akpekpe	10	6	4		-	20
Abotse	10	4	6		-	20
Iyekhei	14	4	2		-	20
Igbe	8	6	4		2	20
Ibie	16	-	4		-	20
Afadokhai	13	3	3		1	20
Egeroso	13	2	5		-	20
Afobomhe	11	5	4		-	20
Iyetse	15	-	5		-	20
Total	121	32	43		4	200

%	60.5	16	21.5	2	100
---	------	----	------	---	-----

**Source: Field Survey 2012**

Table 3 shows that security was the most important factor for erecting building fences in Auchi, this accounted for 60.5%. This is followed by erosion and flood control with 21.5%. Restriction of undesired incursion or movement accounted for 16% while the least factor is aesthetics and this accounted for only 2%. This analysis shows that security is the paramount reason why people fence their buildings. The upsurge in the level of crime in the last decade may not be unconnected with this reason. Also the increases in land disputes between and among land owners is another strong reason for fencing. The study revealed that 58 cases of land disputes have been resolved while 12 cases were still in court. Land owners resolve to fence their land as soon as such lands were either bought or inherited so as to avoid or restrict incursion or invasion by speculators and other persons.

Areas such as Igbe, Abotse and Iyetse are erosion prone areas of Auchi. Erosion treat in these areas has reached a very worrisome level to the extent that these areas are now characterized by very deep gullies. In the attempt to stop or control the invading erosion many owners of buildings particularly residential house owners have resolved to built fences around there houses. Aesthetics is not a popular factor for fencing as only percent of the respondent gave this reason for fencing.

**3.4 Patten of Fencing Buildings in Auchi**

Fencing is widespread in the area and there is no quarter without fences. These building fences are usually erected along roads and streets and are often few distances from the right of way. An average of 8 meters was measured from the centre line of tarred roads to fences along major roads using measuring tape while an average of 4.7meters was measured along untarred roads. These distances are against the minimum standard of 12 meters from the centre line of roads or 6 metres from the right of way to any foundation of buildings including fences according to Obateru (1986) and Essaghah (1997).

The study also revealed that some fences particularly those of residential, industrial and commercial were seen to be erected close or on drainages, side walks and utility lines. In untarred roads and streets, the portion that should serve as sidewalk, drainage and utility lines were completely covered with fences.

The pattern in which fences are erected at road or street junctions, corners and bends is also very prevalent in the study area. Some fences are built very high to the extent that they cover up to the lintel of houses. Such fences in most cases make it impossible to see the walls of the houses except their roofs. Table 4 shows the characteristic pattern of fences in Auchi.

**Table 4: Characteristic Pattern of Fences of Buildings**

Quarters	Less than 12 meters from Road Centreline	Built on Sidewalk/Utility lines	No. at road junction/corners	No. of fences above lintel of buildings	Total
Usogun	8	5	7	3	23
Akpekpe	6	3	2	4	15
Abotse	7	5	2	5	19
Iyekhei	4	6	3	3	16
Igbe	6	3	6	3	18
Ibie	5	7	4	8	24
Afadokhai	2	4	6	3	15
Egeroso	2	3	4	4	13

Afobomhe	4	5	1	1	11
Iyetse	5	3	4	4	17
Total	49	44	40	38	171
%	28.6	25.7	23.5	22.2	100

**Source: Field Survey 2012**

As shown in the Table 4, fences erected less than 12 metres from the road centre line accounted for 28.6%, while those built on sidewalk and utility lines accounted for 25.7%. Those built at corners of streets and in road junctions accounted for 23.5% and those above the lintel of houses having 22.2%. Though the Table 4 shows that the number of fences of buildings that are erected less than 12 metres from the centerline of the road or street are more, the analysis also shows that the pattern of fencing was almost equally related. The meaning is that 177 or 63.8% of the 268 fences surveyed violated the building regulation. Only 91 or 36% were erected without relatively affecting development. This clearly shows that fence developments in Auchi grossly violate set development standards.

**3.5 The Role of the Area Planning Department in Fence Development**

The role of the Area planning office revolves around the building or development code which though permits fences around properties but regulate fencing in such a way that it does not infringe on the right of way and also does not become nuisance to public health and safety. However, the study has revealed that this role is underplayed in the area with the extent of violations. It was observed in the study that fence developments are not regulated by the Area Planning Authority in the area.

This study shows that of the 100 houses administered with questionnaires only 47% had building permit while 63% were without building permit. Although some modern buildings do not have building permits, but most of the buildings without permit are the traditional buildings which were built over 35 years ago. It observed that no single house owner sought for professional advice or input from the Area Planning Authority in the erection of fences. According to the authority, fences do not need permits, but may require it if such a fence will affect public health and safety. The pattern of fence development as revealed in this study infringes heavily on public health and safety.

Sad enough little or no tangible measures are in place to regulate this pattern of development. For example, no record of prosecution or demolition of fences is available in the face of these violations. This goes to show the attitude of the agencies bequeathed with the responsibility of sanitizing the ills of urban development. A number of problems were highlighted by the Area Planning Office as affecting them in carrying out their statutory roles. These include, lack of adequate manpower, materials, vehicles, funding and administrative bottlenecks.

**3.6 Impacts of the Pattern of Fencing in Auchi**

The emergence of narrow roads and streets, uncontrolled erosion and flooding, inadequate light and air to buildings, accidents and traffic congestion are some of the ways that the pattern of fencing is affecting the study area.

Infringement on the right of way of roads with fences has made many of the roads to become too narrow for use. The narrowness of these roads is creating vehicular difficulties especially heavy traffic congestion. Traffic congestion is regularly witnessed along ICE road and polytechnic road roads. Igbe road became dualized in the month of December of 2011 to ameliorate this problem of traffic congestion. In dualizing the road, structures infringing on the right of way of the road, particularly fences and foundation of buildings were demolished. This road is now wide enough easy passage. In addition to traffic congestion, the narrowness of the roads has also resulted in regular accidents in some of the roads. On the question of rate of accidents on these roads, most respondents admitted that an average of 2 accidents involving all kinds of vehicle occur daily. These accidents are sometimes fatal resulting in deaths. According to the respondents, commercial motorbike riders suffer worst accidents on these routes. The untarred roads are

narrower and have created the problem of easy vehicular passage in addition to congestion and accidents. Two motor cars driving from opposite direction are hardly able to pass each other at the same time. One waits for the other off the carriageway to create space for passage for the other. This waste time and create the possibility of vehicles colliding.

Another impact is that of Erosion and Flooding. This study revealed that Usogun, Egeroso, Iyekhei and Afadokhai are heavy erosion and flood prone areas of Auchi. The pattern of building makes erosion to be usually intense and invasive in the area. Fences on natural courses have created other channels which have led to the emergence of heavy gullies in Usogun and Egeroso areas. The damage to land and social infrastructure by erosion in the area is difficult to quantify. The study reveals that over 25 houses have been lost to erosion in the last 5 years while roads, electric poles, and other facilities have been eroded or destroyed by erosion. The respondents also acknowledge that more than 8 persons have lost their lives due to erosion in the last 5 years. Due to blockage of natural drainage with fences and other developments, flooding usually occur whenever it rained. When flooding occurs, movement is usually very difficult and in most cases leading to traffic congestion. In addition, the stagnant water becomes breeding places for disease causing vectors. The frequency of malaria attack as indicated by 76% of respondents attributed the rate of infection to stagnant waters occasioned by floods and dirty environment. Other impacts of erosion and flooding menace in Auchi as observed in the study include inadequate housing, poor supply of social services, land inadequacy, high cost of land, high rents on buildings and the development of dirty housing environment.

High walls are capable of obstructing the elements of the micro-climate of any environment. The flow of air and the degree of light reception can largely be determined by the height of buildings including fences (Ojeifo, 2005b). Of the total of 268 fences surveyed, 38 were found to be about the lintel of houses they surround. On the average they measure about 3.5m high and at this height, the amount of air and light received around a building is greatly altered. Although there was no physical instrument to measure the amount or degree of light and air received in a confinement, however the effects of the amount received can be determined. According to Lucas et al (1990), insufficient air in a confinement may encourage quick transmission of communicable diseases such as measles. Also, it may sometimes increase the available air temperature that may lead to heat disorders such as heat fatigue, syncope, cramps and exhaustion. Body rashes are also common with increased heat wave. The growth of fungus and fungal causing infections thrives in environments without sufficient light and air circulation.

On the personal interview conducted, some residents of the houses with the high fences agreed that their fences were affecting them. Apart from limiting visibility, some agreed that the fencing partly influenced occasional but excessive heat especially during the dry season. Some residents also admitted that heat rashes and fungal growth on food, shoes and other damp materials in the houses were very common due to insufficient air and light.

#### **4.0 Recommendation**

To eradicate the problems of fencing and to a large extent the problems urban development in Auchi, the following are recommended. First, a comprehensive urban renewal exercise is required in the area to enhance physical development. By this, any structure standing on the right of way or constituting nuisance and threaten the health and safety of the population should be removed. Such exercise should be carried out through collaborative effort of the state and local governments with the relevant planning agencies. This measure would ensure that the existing roads are widened and provided with standard drainage network. Also the problem of traffic congestion, accidents, erosion and flooding in this area would be solved.

Secondly, there is need for enlightenment campaign to educate the people of the dangers inherent in the pattern of fencing in the area. The Area Planning Authority and the planning department of Etsako west local government council should champion this campaign to so that the people may know among others, the quality materials to use, the best heights to take. The people should also know fencing on the right of way create problems such as erosion and flooding. Upon this enlightenment campaign, the Area Planning Authority should henceforth give approval for the erection of fences. In this, they must ensure that standards relating to fencing are strictly adhered to. After this enlightenment, fences without approval

should be demolished and their owners prosecuted. As a peculiar way of promoting aesthetics, the planning authority can zone or designate areas in Auchi where fencing should and should not be erected.

Finally, the primary reason for the unwholesome and haphazard pattern of building and fencing in Nigerian urban centres is because most of these centres are not planned. On the basis of this therefore it is suggested that each urban centre in Nigeria should have a master plan that will serve as guide to physical development. In Auchi such a plan would halt the misuse of the urban landscape.

### 5.0 Conclusion

Fencing of premises in urban centres in Nigeria is a common phenomenon. Most fences, whether for residential, commercial institutional, industrial or commercial purposes are erected according to owner's desire. This desire is unregulated and therefore constitutes menace to urban growth and development as shown in this study. For sustainable urban growth to be achieved in Auchi, it is hoped that the suggested recommendations would be pursued with vigor.

### References

- Essaghah, A. (1997). *Urban Planning Concepts, Standards and Symbols*. Lagos, Amfitop Books, 59pp.
- City of Rohnert Park Community Development Department (2003) - Fence, Wall and Landscape Standards. Online (Available) <http://www.ci.rohnert-park.ca.us/modules/show> (Accessed June 25, 2012)
- Information Bulletin, 223 (2009) - Specification for Wood and Masonry Fences. City of San Diego Development Services. Online (Available) [www.sandiego.gov/development-services/homeowner/fences.shtml](http://www.sandiego.gov/development-services/homeowner/fences.shtml) (Accessed June 25, 2012)
- Lucas, A.O and Gilles, H.M. (1990). *A New Short Textbook of Preventive Medicine for the Tropics*. Third Edition. London, ELBS/Edward Arnold, 178pp
- Obateru, R.I. (1986). *Land Subdivision Techniques*. Ibadan, Presentation and Publishing Co. Ltd. 10pp.
- Ojeifo, O. M. (2005a) The Planning Implications of Uncontrolled Development in Emerging Urban Centre of Ekpoma. *The Built Environment Journal*.1(1), 34-39
- Ojeifo, O.M (2005b). *Elements of Planning and Design*. Benin City, Easy Way Computers and Ebikere Venture, 79pp
- Omole, F.K. (2001). *Basic Issues on Housing Development*. Ondo, Femo Bless, 56pp
- The Springfield Development Service Department (2009) – Fence Standards. Online (Available) [http://www.ci.springfield.or.us/dsd/planning/publication/Fence\\_Standards.pdf](http://www.ci.springfield.or.us/dsd/planning/publication/Fence_Standards.pdf) (Accessed September 5, 2012)
- Taylor, L.H. (2012) - Guide to pool and Patio. Online (Available) <http://poolandpatio.about.com/od/poolpatioglossary/g/patioglossfence.htm> (Accessed September 3, 2012)
- Wikipedia the Free Encyclopedia (2012) – Online (Available) <http://en.wikipedia.org/wiki/Fencing> (Accessed September 3, 2012)