

## SOCIAL ORGANISATION AND SPATIAL CONFIGURATION OF MASS HOUSING IN NIGERIA: A STUDY OF INTREMEDIATE HOUSING ESTATE IN MINNA, NIGERIA

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### Abstract

Ancient mass housing units in Minna lacks flexibility for sustainable spatial transformation in relation to changes in social life style. Therefore the aim of the paper is to analyse the relationship between spatial configuration and social organisation in multiple housing in Minna. The method adopted for this study is quantitative research approach via the questionnaire survey. The questionnaire was design in structured form to obtain relevant information concerning the factors that affect transformation in the estate. The result obtained from pie chart analysis shows that increase in family size which is proportionate with the need for additional spaces is seen to account for 31% and 36% respectively and 67% collectively the reasons for transformation. This portrays the tendency of social and spatial growth of a typical Nigerian household. The paper recommended that flexible innovative designs that will live through the lifespan of the unit houses be given more emphasis in mass housing design.

*KEYWORD: Housing estate, Mass housing, Spatial configuration, Social organisation and Urban Centres*

### 1.0 Introduction

Ancient settlements historically came into existence and subsequently developed as a result of social and spatial factors of human needs. For ages man's response to spatial needs was not devoid of his social changes, as such the need for social sustainability in building design. The choice of spaces therefore was socially driven. Sustainable architectural development has been imbibed in the 21st century and the holistic nature of successful sustainable building design considers how building occupants will interact with the immediate vicinity and community of the building (Paul, 2012) as well as create interior spaces that are socially driven. The diversity in social needs implies that the spatial requirements will equally differ; therefore a basis for spatial inequality based on social considerations as seen in buildings. The dynamism and relativity of social lifestyle and subsequent spatial needs results in dynamic transformation in housing. To this effect mass housing in Minna which usually does not accommodate flexibility to transformation connotes yesterdays' design today's problem or today's design tomorrow's problem.

In this study a naturally transformed mass housing was looked into with its social instincts of transformation assessed to understand the relationship of social lifestyle and spatial

changes in linear mass housing. The aim of the paper is to analyse the relationship between spatial configuration and social organisation in multiple housing in Minna, Nigeria. This is achieved through the followings objectives:

- Accessing the spatial transformation of mass housing using the intermediate housing estate Minna as a case study.
- Describing the indices of social needs and the pattern of transformation
- Analysing the social parameters that gave rise to the transformation and subsequent spatial re - organisation.

## 2.0 Methodology

The method adopted for this study is quantitative research approach via the questionnaire survey. The questionnaire was design in structured form to obtained relevant information concern the factors that affect transformation in the estate. These factors were then analysed to determine the relationship between space and social lifestyle in other to determine sustainable built enclosures. The simple random technique was employed for questionnaire administration in order to get the in depth of the matter. The targeted population are the occupant of the houses and the landlords. The research design employed for this paper was survey method because it gives a clear view of the situation on the ground. Conclusively the paper uses excel method for the data analysis (pie-chart).

## 3.0 Rigid and Flexible Design

In Japan, Singapore and Hong Kong multi unit housing which house majority of the populace is high rise resulting from limited land supply yet vertical floor flexibility allows for transformation (Joseph, 2012). These houses despite the multi level design have imbibed the principles of flexibility and spatial relativity in space configuration.

In Nigeria most mass housing are been transformed from its original design to accommodate social needs. It could then be deduced that transformation of mass housing is a phenomenon in Nigeria especially amongst the middle and low income earners. This is much easier in the northern and middle belt regions because of the availability of land which enable designs of this category to be linear rather than vertical and in multi levels.

The study area is an old estate established in 1976 as a result of the creation of the state to accommodate civil servants in the state capital. It is an 8 unit (fig 2) semi detached 3 – bedroom housing estate with rigid design which makes remodelling of housing units difficult

(fig 1). Four of these houses have all their sides except the façade enclosed with common walls (fig 2) which makes adaptation difficult.

#### **4.0 User Participation**

The concept of user participation has long been seen as a critical tool in sustainable building design and housing sustainability. The principle has been so adapted in all spheres of life that people today want to have a say in their affairs. This has resulted into rapid sustainable development in these areas of life where it has been implemented. Beyond user participation in the building design is futuristic projections as a result of changes in house ownership and socio-economic advancement of its occupants.

#### **5.0 Spatial and Social inequality**

The concept of spatial provisions in mass housing before now is assumed that occupants are of the same social status and therefore should be provided with the same house type with equal spatial distribution as in the case of the estate under study. However this has been proved wrong just as in similar housing provisions in the country with the pattern of transformation seen after complete ownership of the houses. The question that arises is that to what extent Nigerians adapt to spatial functional arrangement in mass housing. Schnell and Benjamini, (1999) described the concept of spatial and social relationships to be network of interactions of human daily activities' circulation, structured and re-structured in society and space. This certainly differs in individuals and groups. The average network of human interactions (social lifestyle) within given space (spatial requirement) overtime determines the design in both function and space. The disparities seen in self built homes reflect the differences in social and spatial needs. This should be reflected in mass housing for effectiveness and efficiency as it is seen to appear later after transformation.

#### **6.0 Mass Housing and Building Transformation of the study Area**

Most mass housing in Nigeria are partially transformed upon occupation and fully transformed upon full ownership. Mass housing in Nigeria developed as a result of the need to house government civil servants after independence especially in the major cities. Their existence could mainly be seen in the urban settlements. In the quest for meeting the growing housing deficiency, government at both the federal and state levels have employ this medium in providing housing for the growing population in the urban areas. This has equally been embraced by private developers. Intermediate Housing Estate Minna is one of such government interventions in Minna four decades ago. It was built to house staff within the civil service force after the creation of the state in 1976. During these period transformations were limited to increment of rooms within the courtyard to accommodate the increasing

family size. By the year 2000 when democracy had fully gained grounds and for the fact that government could no longer maintain these houses couple with the fact that most civil servant occupying the houses have no houses of their own to move to upon retirement, the government decided to sell the houses on owner occupier basis leading to a full blown holistic transformation.



Plate1. Showing the estate, bounded on three sides with roads and a drainage channel on the fourth (Source: Google image)

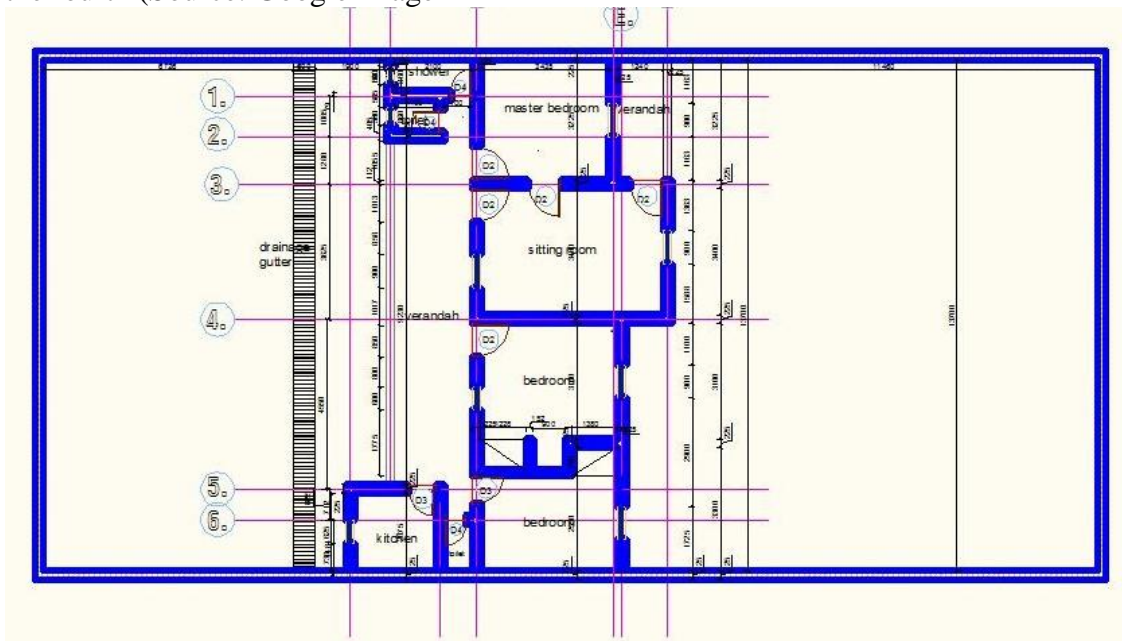


Fig 1: Typical Unit Floor Plan



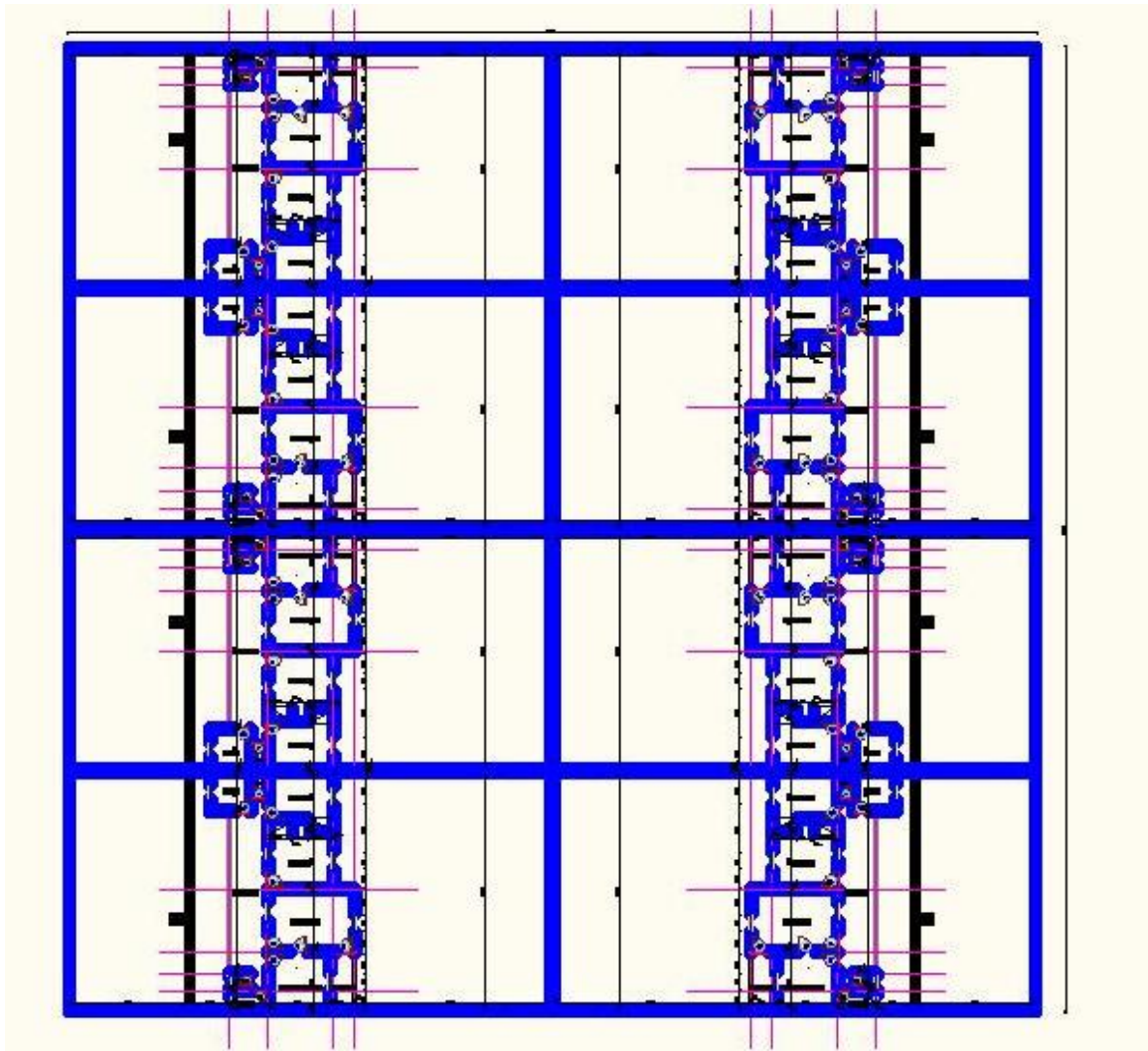


Fig 2: Typical Floor Plan Eight Units Block

### 7.0 Housing Quality and Sustainable development

Housing quality remains a relative term in the building industry. However it is often referred to as the house that meets the basic needs of shelter with the availability of basic facilities for the well being of its occupants. Therefore if houses are to fulfil the needs of shelter with basic facilities it must be flexible to the dynamic spatial needs of the occupants which results from their social intercourse with one another and then the environment. Since these houses are meant for its occupants it must be functionally effective and sustainable. Holistic sustainability is therefore recommended, because Paul, (2012) stated that holistic sustainability - covers economic, physical and social, factors of the occupants in relation to the spaces, and should be qualitative in nature. Utilisation of these spaces must therefore be dependent on the economic, physical and social well being of its users. Thereby considering a holistic sustainability and ensuring a sustainable design.

### 8.0 Concept of adaptable and flexible design

Open design which transformed into flexible and adaptable design solves the problem of rigidity in building design. It eases adaptability to buildings years after construction, occupation and full ownership especially when there are changes in requirements. The concept of adaptable design is to enhance effectiveness, efficiency, maintenance, improvement or change in functionality of the building at later times (Gu1, *et al*; 2009). Therefore building designs needs to be transformable and adaptable with ease and minimal cost.

### 9.0 Discussion of results

The distribution shows majority of the occupants on owner occupier status and are civil servants. This means that the social lifestyle of a relatively large family living in a house with few bedrooms as indicated on fig. 2 and 3 is not limited to the less privileged but practiced even among the middle and educated class. Despite the household number and the social status, reliance on firewood for cooking which invariably negates the concept of sustainable housing is widely used as fuel for cooking (see fig7). Interestingly this phenomenon exists despite the spatial transformation of the estate; it will therefore be wise to say that series of factors determined the spatial changes. For the purpose of this research three varying factors, each with its indices were considered. They include

- Social status relating to job and house ownership.
- Spatial re-configuration and family distribution.
- Spatial transformation and justification.

A. Social status regarding job and possession of the house: This describes the household occupation and house ownership.

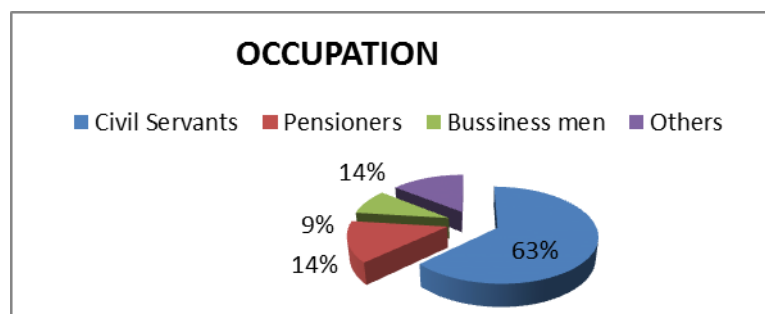


Fig 3 Social status

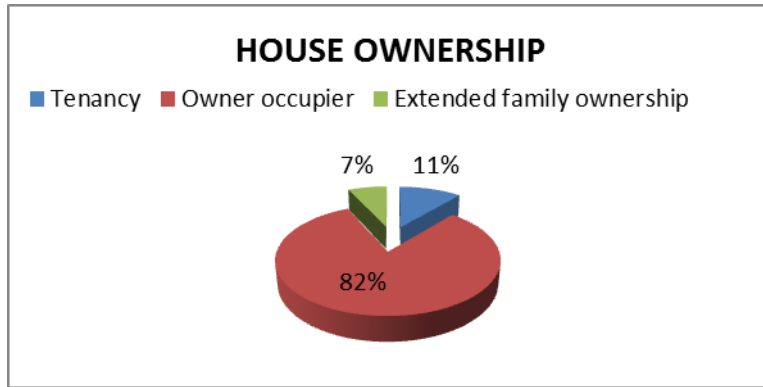


Fig 4 House ownership

B. Spatial re-configuration and family distribution: the family size in relation to the living spaces and cooking habits were compared. More than 50% had increased the number of bedrooms to meet the increasing family size.

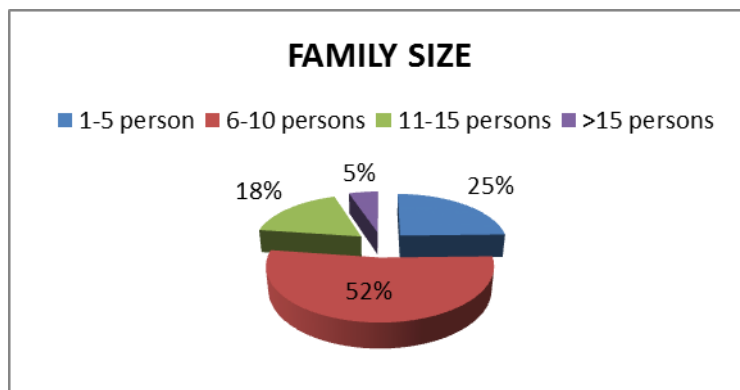


Fig 5 Family size

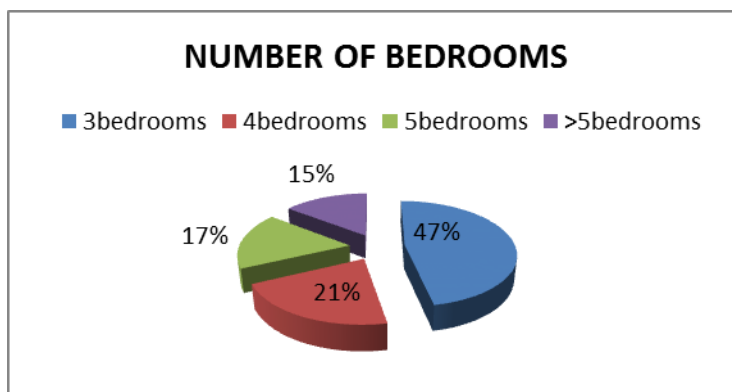


Fig 6 Number of Bedrooms

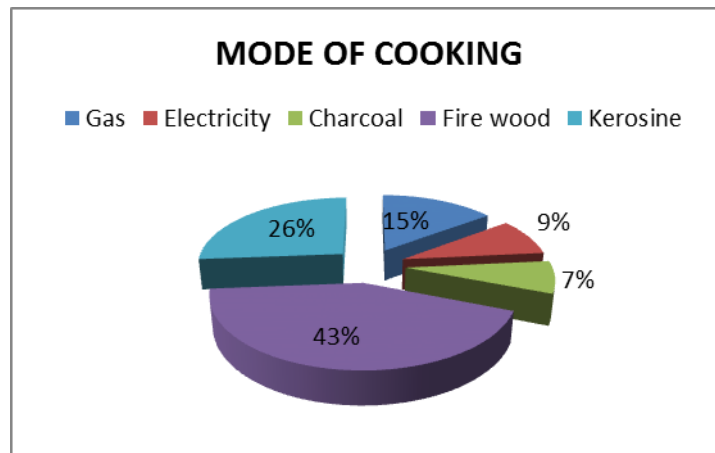


Fig 7 Fuel for Cooking

Solid boundaries remain key cultural element in Nigerian Architecture aside the function of security, perhaps to further enhance family privacy and control which is paramount to typical Nigerian Architecture. Living areas especially bedrooms that further enhance family members' privacy and control, seclude the different family genders and enhance further domestic cultures of resting, private life, and family socialization. Bedrooms developed into private homes with facilities for living that are similar to those in the living rooms, dining, and kitchen. These spaces are in some case linked with conveniences which make social interactions in it relatively independent of other spaces around the house. This social system of domestic life is difficult to achieve due to initial configuration. Consequently it was observed that more than 50% have their family sizes in relation to living areas beyond the acceptable standards. A house is said to provide sufficient house hold living area for members if its rooms houses not more than two people per room (UN, 2002)

Transforming spaces into other functional usage clearly depict the cultural lifestyle of the occupants. For instance the creation of worship areas and 'islamiyyah' schools does not only inform that Muslims are predominant in the environment, but that spaces for their congregational five daily prayers and the children's 'Quranic' schools which are usually not to distant from their homes and part of their social life were not initially considered. Domestication of animals and ability to shop on one hand and creating a source of livelihood and additional source of family income led to the springing up of animal pens and shops respectively. These shops in most cases are attached to the fence and accessed from both outside and inside the compounds. Incidentally despite these transformations most houses have only a single access and exit to the compounds due to design constrains (fig 10). This is not only contrary to their culture but poses negative effect to sustainable spatial interaction.



C. Spatial transformation and justification: In line with the social interactions with their enclosed spaces the following spatial needs according to priority were introduced fig. 6. These spaces were justified by the social factors given in fig.7.

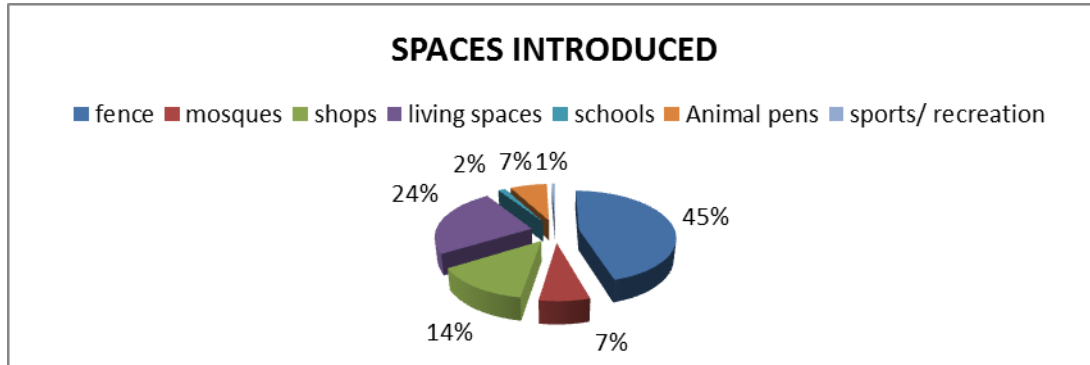


Fig 8 Spaces introduced after possession

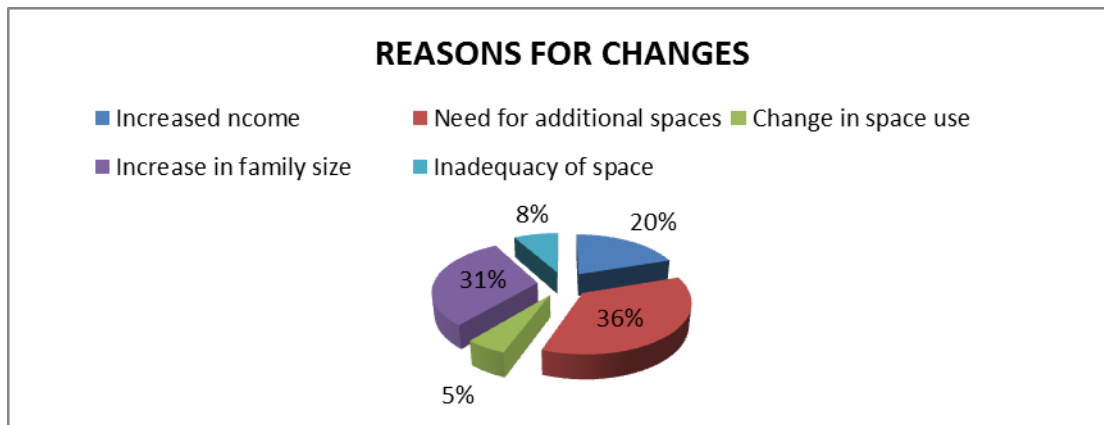


Fig 9 Reasons for changes

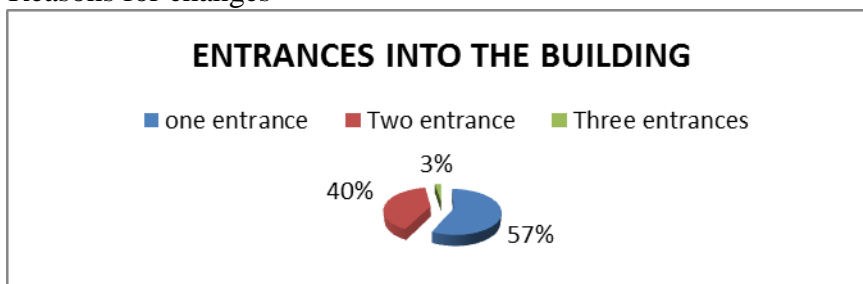


Fig 10 Entrances into the compounds

## 10.0 Conclusion

Inferences are drawn in relation to the three variable factors considered above, thus:

Social status regarding job and possession of the house;

- Housing transformation is seen to affects all types of houses occupied by all status of people.
- Housing transformation is widely found with occupant living in their own houses.
- The level of transformation is equally proportional to the level of ownership.

#### Spatial re-configuration and family distribution

- More than 50% of the households have large families especially above 6 persons
- About 50% still maintained three bedrooms in their compounds which is not commensurate with the family size.
- Increase in family size which is proportionate with the need for additional spaces is seen to account for 31% and 36% respectively and 67% collectively the reasons for transformation. This portrays the tendency of social and spatial growth of a typical Nigerian household.

#### Spatial transformation and justification;

- More than 50% of the household could not provide additional entrances/exit to their houses. This is because they are completely enclosed by other houses and therefore at disadvantage to transformation in that regard.
- The distribution of spaces introduced and the reasons for these transformations indicates the varieties in spatial transformation. It equally shows the justification for spatial transformation as a result of social changes. It can therefore be deduced that the dynamism in social factors ensures flexibility in social lifestyle. However, spatial configurations must be flexible in line with the social factors for it to be functionally effective, efficient and sustainable. Consequently mass housings must incline to changing social lifestyles of its occupants in order to be sustainable.

The paper therefore, recommends that design concentration be given to Mass housing as it has become an integral part of urban settlements in Nigeria and a means to ameliorating housing shortage in urban centres. The study revealed that social factor affects spatial demands and the quality of spaces is dependent on not only the physical but the social and economic value. Therefore for holistic sustainable mass housing design these variables are necessarily to be considered. Flexible innovative designs that will live through the lifespan of the unit houses should be thought about. A further research into the correlation of adaptable flexible housing and social housing is therefore recommended.

## References

Buttimer, A. (1981). Social Space and the Planning of Residential Areas, *The Experience of Space and Place*, St Martin's Press: New York.

Google Earth. (2012). Google Earth Image 9°37'09.11"N and 6°32'18.61"E elevation 821 ft above the ground level, retrieved on 15<sup>th</sup> April 2012.

Gu<sup>1</sup>, P., Xue<sup>1</sup>, D., & Nee<sup>2</sup>, A. Y. C. (2008) Adaptable Design: Concepts, Methods, & Applications, Proc. IMechE Vol. 223 Part B: *J. Engineering Manufacture*

Joseph, F. W. (2012). Factors Affecting Open Building Implementation in High density Mass Housing design in Hong Kong, *Division of Building Science and Technology, City*

Paul, J. (2012), Successful Sustainable Design – A Holistic Approach© Sinclair Knight Merz

Schnell, I. & Benjamini, Y. (1999). Socio- Spatial life Style and Segregation, *European Journal of Geography* <http://cybergeog.revues.org/23893> retrieved on 12th June 2012,

United Nations, (2002) Expert Group Meeting on Urban indicators held in Nairobi [http://www.unhabitat.org/programmes/guo/document/EGM\\_1](http://www.unhabitat.org/programmes/guo/document/EGM_1) final report 4 Dec, 2002.