

## **EVALUATION OF DESIGN REQUIREMENTS FOR PROSPECTIVE LUXURY HOMEOWNERS IN KANO STATE, NIGERIA.**

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**ABSTRACT:** *The features that surrounds a location often characterize a luxury home, be it natural or manmade facilities ranging from rockview, mountain side, water front, parks, golf course, school districts or downtown districts. Other classification criteria include customization levels, historical or architectural importance and also absence of crime, commercialization and industrialization. However the design requirements for these facilities vary according to the location of the region and the needs of the final user. The basic design consideration for luxury homes has been space, materials and aesthetics; much attention has not been paid to user's requirement, this has led to continuous post-constructional transformation of these buildings. This paper evaluates the design requirements for prospective luxury homeowners in Kano state, Nigeria through identification and analysis of their requirements and variations. This study is also part of a user participatory research carried out in housing customization and data was collected from the aforementioned study area through administering questionnaire and this collected data was analyzed using SPSS and MSEXcel. The results are presented in tables and charts. The paper will conclude by showing the design requirements of prospective house owners in luxury homes that will enhance user participation in luxury home designs. Recommendations are made for architects to embark on user survey before design so that the final homeowners can adhere to design decisions taken by the architect.*

**KEYWORDS:** Design requirements, Homeowners, Luxury homes, Post-constructional changes, Satisfaction

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## **INTRODUCTION**

Over the years, housing has remained an important part of human need; it is valued alongside other basic necessities such as clothing and food. It is also one of the primary means of measuring human development both socially and economically. However the problem associated with housing has remained its insufficiency, which is led by increase in urbanisation and population growth, as Ajanlekoko, (2001) has stated that the need for housing can only be met, when five hundred to six hundred thousand units are erected per annum based on an occupancy ratio of four people per room, without which there will exist continuity in dwelling unit shortage, overcrowding, exorbitant rents and poor urban livelihood.

The public and private sector have nonetheless remained incessant, in trying to meet up the issues of housing demand, supply and affordability. The challenges faced with the delivery of this housing is that, it has been impaired by high cost of building materials, strict mortgage loan and imposed government policies, which has also left a gap of housing quality as an index to living standards.

Most problems tackled by home providers have been basically on its supply, no attention has been paid to the need and desire of the final home users, therefore the designs provided are generic, and its redundancy rate is on the high side. In Nigeria for instance, design requirements are often subjected to architects decisions. Final home designs drafted only retain communal space type with other designs, especially in residential cases. Most modification and differences appears in space sizes, arrangement and finishes.

Luxury home designs apart from its classification of been located in proximity to rockview, mountain side, water front, parks, golf course, school districts or downtown districts and also based on their customization levels, historical or architectural importance, absence of crime, commercialization and industrialization needs special user design requirements, more so when the region is been located in put in to proper cognisance. Kano state luxury homes are generally bound to be different from the ones in other parts of the country, not only due to difference in climate and culture of the place but also due to the difference in users of the of the houses in Kano state as related to other parts of the country. The minimal attention given to user's requirements in design of luxury homes has posed to be a serious dilemma, which has led to continuous post-constructional transformation in these buildings. This is because most designers of luxury homes focus more on space, aesthetics and material/finishes as been significant compared to embarking on a user survey

The aim of this research paper is to evaluate the design requirements for prospective luxury homeowners in Kano state, Nigeria, which can be achieved through identifying their requirements and analyzing the variations that can be created in the designs. With the growing dynamism of housing market from the developers driven designs to the user driven ones, there becomes a need to perform a user participatory research, which examines the need and aspiration of house owners, through the analysis of their requirement. This to the end-user, will be an avenue for their opinions to be heard and their needs be catered for, which has proven to be more cost efficient than future transformations after construction.

## **DESIGN REQUIREMENTS OF LUXURY HOMES**

Design requirements refers to a particular quality or performance demanded of a design in agreement with certain fixed regulations, these requirement are often not enforced from the outside; it is a factor which is judged according to the nature or circumstance of a building design. Meeting up these fundamentals are focus to what is been designed and where the design is to be located. Residential designs in most cases have a recurring requirement type basically the living, sleeping and service zones.

Luxury homes on the other hand existed as far back as any kind of housing development itself, but its distinctive future is what makes it different from other housing scheme. Apart from its difference due to the kind of site features located in its proximity, it is popularly known to be sited in the suburban area or rather on the outskirts of the main town. This is so because the high-class category income earners live in these houses. James, (2005) described luxury housing, as that kind of secluded homes or apartments in an estate or in one complete building located in a reserved part of a community, designed basically to set up a gap between the rich and the poor housing style and status. Thus estimation can be made on the value of such houses and its conditions. According U.S. Housing Standard (2001), Luxury properties are defined to have an appraised value of \$1 million and above.

The basic requirement of these facilities are based on its exterior site views and features which Banker, (2011) have described to range from waterfront, rock side, or such facilities as nearness to golf courses, school districts, and parks. The classification also takes into cognizance presence of surrounding homes, absence of crime rate, customization of the home and architectural or historical significance. Nathaniel, (2011) however described the requirements for luxury homes, from the perspective of its interior function as subject of the final users need. Landis (2008) stated that the basic responsibility of the architect or designers apart from creation of drawings and specification for luxury homes designs is that they should also endeavour basic design requirement provided by owners using this buildings are met ranging from the site to the primary interior spaces.

Despite what the wishes and requirement of each individual user maybe, it is important the design requirements for luxury accessible homes should be able to meet the fluctuating and dynamic needs of the house dwellers as they undergo different life occurrences. (Lifetime Home Design Guide, 2011). This means standard of inclusivity, good value, sustainability, adaptability and accessibility should be provided so that design solutions can be met during future adaptation which will be cost saving and simple. Leif, (2012) stated that the holistic approach of meeting up clients requirement in home designs is by creating a platform where they can fill up a form stating the family needs, the kind of architectural style (say; contemporary, Mediterranean, modern//ultra modern Victorian) all the way to declaring the different kind of spaces required in the home to be built, as shown on figures below;

**Figure 1.0: Client Requirement Form**

The form contains the following sections and fields:

- Front Porch:** Radio buttons for Yes/No.
- Foyer:** Radio buttons for Yes/No.
- Living Room:** Radio buttons for Yes/No; checkboxes for 'Combined with Dining Room' and 'Fireplace'; a question 'Is Living Room separate from the Great Room?' with a text input field; a 'Comments' text area.
- Dining Room:** Radio buttons for Yes/No; a 'Number of persons' input field; checkboxes for 'Additional informal dining area' and 'Fireplace'; a 'Comments' text area.
- Great Room:** Radio buttons for Yes/No; a text input field for 'Accessible to which rooms?'; a checkbox for 'Fireplace'; a 'Comments' text area.
- Deal/Muslo Rm:** Radio buttons for Yes/No; a choice between 'Toilet and Bath' or 'Powder Room'; a checkbox for 'Entertainment Center'; a 'Comments' text area.
- Office or Library:** Radio buttons for Yes/No.

Source: (Leif, 2012)

The figure 1 above shows a requirement form for client/users of luxury homes, stating the kind spaces that will be needed and even went as far as its proximity to the next space and the quantity of such function that is required within a building. Producing favourable service among users towards their luxury homes as described by Ehemann (1974) is very significant; there becomes a necessity of giving attention to their varied requirements and need of their homes. Future planning will therefore include information obtained from the users themselves, adapting the houses to the end-users is far more preferred than forcing the end-users to adapt to the houses.

## USER PARTICIPATION IN HOME DESIGN DEVELOPMENT

Home users are considered as one of the major stakeholder in the construction industry. User participation in designing built environment is regarded very imperative from psychological, social and functional point of view, given the complexity of the relationship between human and its environment. It is of most concern in residential environment where people relate in a closer and continuous manner. (Misra, 2002). Qusoiri, *et al* (2010) stated the significance of User participation in housing schemes as one which gives a better end product than the designer working on his own, reflecting the needs and desire of the residents. This is however due to nature of these houses having more customizing abilities more than other housing types. In a research carried out in Sri-Lanka after the Tsunami, the government efforts to rebuild the nation, namely the Owner Driven Program and the Donor Assisted Program, launched two programs. Results however showed that the former was more productive than the latter, in such a way that the Owner Driven Program built houses were earlier occupied, had a better completion rate, started much earlier and even it small scale development program achieved more than the larger scale of Donor assisted Programs (Lyons, 2009).

The significance of user participatory design however, can never be overemphasized, it is said to help in achieving sustainability in building as stated by many researchers. [(Nnaggenda-Musana, Elwidaa, & Nawangwe, n.d), and (Deniz, Emine, & Ömer, 2010)] User participation helps in attaining quality houses thus achieving Users satisfaction, as shown diagrammatically on Figure 2, below, where a theoretical connection between housing quality and user participation and user satisfaction in turn mediates the relationship.

**Figure 2.0: Attaining User Satisfaction.**



*Source: (Deniz, Emine, & Ömer, 2010).*

Nigeria as a whole lacks user participation in its home design process, only in cases where housing scheme provided is for personal individuals, otherwise there are generally same designs throughout the estate. Differences are bound to occur when end-users participate, which reflects variation in needs and desires. Larson, Intille, Mcleish, Beaudin and Williams

(2004), declared the inability of a large number of people to employ an architect is what lead them to making choices from generic houses produced. This calls for the need for incorporation of User participatory process in housing design in Nigeria, especially in luxury homes/estates where a large amount of capital is needed to obtain one and makes residential satisfaction paramount. Residential satisfaction according to Yanar, (1994) is related to the desires and hope of individual and how they perceive their physical environment, how these perceptions affect their performance, their adaptation to their residences or changes in their residences due to inadaptability, choice, standards, requirement, and quality of their residences and its life and habitability.

## **RESEARCH METHOD**

This study is part of a customization research carried out on cosmetic customization of luxury homes by the author(s), it is part of a user participatory research carried out in housing customization in Kano State. The question the researchers seek to answer is stated in the objectives above. Data collection was through administration of a closed-ended questionnaire. Systematic random approach was employed in selection of respondents. Luxury home dwellers of GRA (Government Reserved Area), Bompai and Ahmadu Bellow way were chosen as the respondents as they suite the classification of luxury home users of Kano state. A sample size of 100 was chosen for the questionnaire administration, however only 47 were returned out of which 41 were considered valid, 6 were invalid. 82% of the response was deemed to be viable for this research. The questionnaire constituted interior space requirements, site facility requirements, and also whether or not they needed their boys quarters attached to the building. Results were analysed on SPSS through cross tabulation method and charts and tables were chosen for the result discussion and were generated using the MS. Excel.

## **DISCUSSION OF RESULTS**

Results are discussed based on the stated objectives above; and highlights the analysis and participation of the prospective users on kind of spaces and differences in the quantity of communal spaces they will want.

### **Identifying the Requirement of Prospective Users**

The responses gotten from the various prospective users as regards the kind of interior space, site facility and whether they will want their boys/maid quarters attached is been discussed in this section. After identifying these requirements the results are shown under the sub-headings below;

#### **Interior Spaces**

The various spaces in the house were listed out and some home owners wanted more than a single number as shown on Table 1. A percentage of 36.6% wanted just a single living room while the other 63.4% of the users wanted two living rooms. Bedroom numbers were from 4, 5, and above and 95.1% of the responses settled for 4Nos bedroom while 4.9% went for 5Nos. Other rare functions such as Study, Guestroom, Home Offices and Laundry were

analysed and the User requirements were identified, 95.1% of the respondents wanted a guest rooms while the rest 4.9% wanted home offices. An approximate of the 36.6% who wanted single living room also wanted Study in their homes.

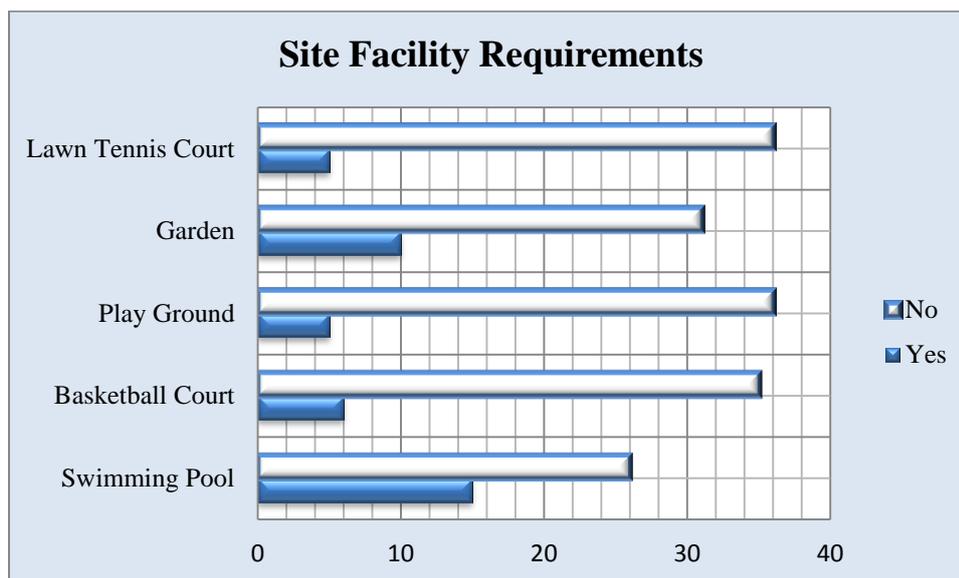
**Table 1.0: Interior Space Requirement**

Interior Spaces	Yes(%)	No(%)
Living Rooms	36.6	63.4
Bedrooms	95.1	4.9
Guest Room	95.1	4.9
Study	36.6	63.4
Home Office	4.9	95.1
Laundry	100.0	0

*Source: Author's Field Survey (2012)*

### Site Facilities

**Figure 3.0 Site Facilities Requirement**



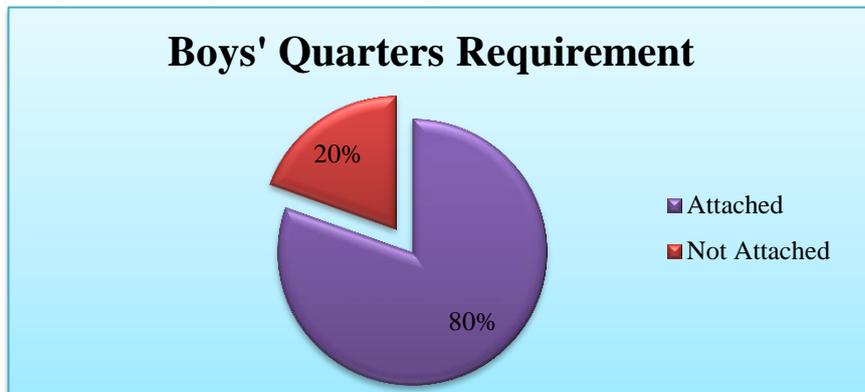
*Source: Author's Field Survey (2012)*

The kind of site planning elements have recently become a focal point in today's residential architecture, Users have evolved from allowing architects make choices on their landscape to specifying the particular one they want. This from their responses is dependent on their family sizes, age and personal preferences. Figure 3 above shows that 12.2% of the respondent have claimed to have large family and children and chose the Play Ground as Site facility, while a majority of 36.6% went for the Swimming Pool, due to its trendy nature and respondents believe that they can easily cool off from the extreme weather conditions of

Kano State. Basketball court and Lawn tennis court chosen by 14.6% and 12.2% respondents respectively were selected out of pure preference. The respondents of which constitute 24.4% of the rest were regarded to be of higher age group and chose Garden as a preferred site facility requirement.

### Boys Quarters

**Figure 4.0 Boys Quarters Requirement**



*Source: Author's Field Survey (2012)*

Boys quarters design have become a relevant part of designs in recent times, especially luxury homes that most times reverse it function as maids or servant room. These boys' quarters design comes in two forms and attached to the main building or detached, that is has a different substructure. Figure 4 above shows the Users preference of the type they will prefer. 80% of the Users wanted their boys' quarters attached to the main building while the rest 20% wanted it not on same structure, which is detached.

### Analyzing the variations in their requirements

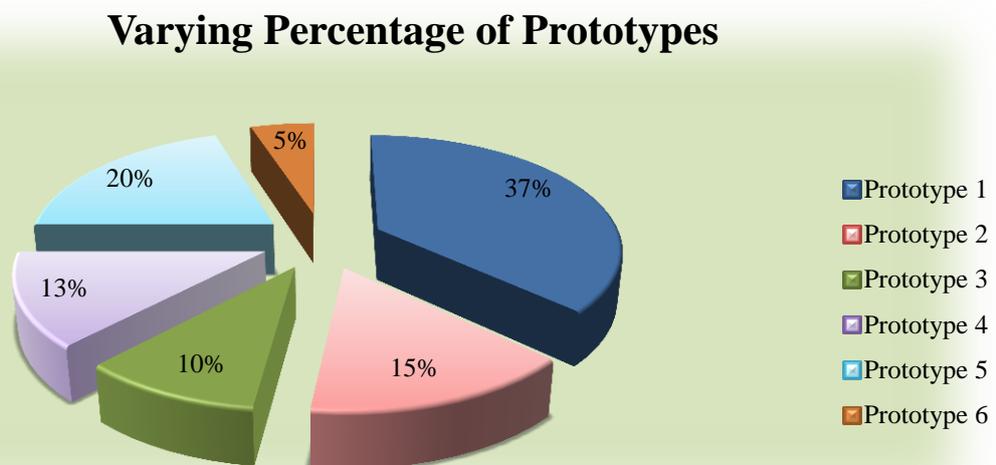
From responses gotten, a degree of variations can be attained in at least six categories, based on different functions and the site facilities, and for the purpose of this paper, six possible combination of a household can be explored, which is shown on Table 2 below; Prototype 1 will be a combination of the usual residential design function with a single living room, 4Nos bedrooms, guestroom, study and a swimming pool as its site facility. Prototype 2 on the other hand has 2Nos living rooms, 4Nos bedrooms, a guest room and basketball as its site facility, Prototype 3 and 4 have the same interior space requirements as Prototype 2. The variation however occurred in the site facilities which are the Lawn tennis court and Playground for Prototypes 3 and 4 respectively. Prototype 5 is only different from the preceding prototypes but differs because it has 5Nos bedrooms and no guestroom, with Garden as its site facility. Prototype 6 has same site facility with prototype 5 (garden) but varies in interior spaces because it contains 4Nos bedrooms and a Home Office.

**Table 1.0: Interior Space Requirement**

	<i>Prototype 1</i>	<i>Prototype 2</i>	<i>Prototype 3</i>	<i>Prototype 4</i>	<i>Prototype 5</i>	<i>Prototype 6</i>
<b>Interior Spaces</b>						
Living room (1No.)	✓					
Living room (2No.)		✓	✓	✓	✓	✓
Bedroom(4Nos.)	✓	✓	✓	✓		✓
Bedroom(5Nos.)					✓	
Guestroom	✓	✓	✓	✓		
Study	✓					
Home Office						✓
<b>Site Facilities</b>						
Swimming Pool	✓					
Basketball Court		✓				
Lawn Tennis Court			✓			
Play Ground				✓		
Garden					✓	✓

*Source: Author's Field Survey (2012)*

**Figure 5.0 Frequency Rate of Varying Prototypes**



*Source: Author's Field Survey (2012)*

The summary of the occurrence rate of each of the varying prototypes can be seen on Figure 5 above. Prototype 1 has the highest frequency of 37%, and was succeeded by Prototype 5

with 20%. Prototypes 2 and 4 have 15% and 13% recurrence respectively, while Prototype 3 and 6 had the lowest frequency of 10% and 5% in that order.

## CONCLUSION AND RECOMMENDATION

The knowledge and need for satisfaction is still unexplored, trends in architecture around the world have proven and inferred the desire and significance attaining satisfaction of final building users, the inability to meet up this satisfaction level is what has incessantly lead post-constructional alterations and transformations in building (housing) designs. Countering this problem has become necessary to mitigate the exorbitant cost of these alterations and changes, therefore, for this reason came about the need of user participation in housing development. This research has also successfully been able to infer the need of user opinionated design by been able to sure variation and changes of design in every individual as no two users have the same taste and desire, especially when luxury homeowners are concerned and they are willing to pay little more to achieve what they want in their buildings and also create adequate difference from other buildings. Conclusively it is always easier to adapt homes to style and desire of individuals than to make individuals adapt to any built home. Thus; it is recommended that;

Architects should always embark on user survey before design so that the final homeowners can adhere to design decisions taken by the architect. User survey can be carried out in different forms among which are;

- a. Collaborative; where the user works hand in hand with the architect and design team to accomplish what the user wants.
- b. Pre-design survey; which involves interviewing the users with high prospects of living in these homes so as to be able to have an idea what their actual desire is, this is often times termed as the “*transparent*” means of survey
- c. Cosmetic; this involves a pre- design survey also, but in this case they are not aware of the results and different methods of attaining users desires are approached by actually offering home designs in different and miscellaneous ways.

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