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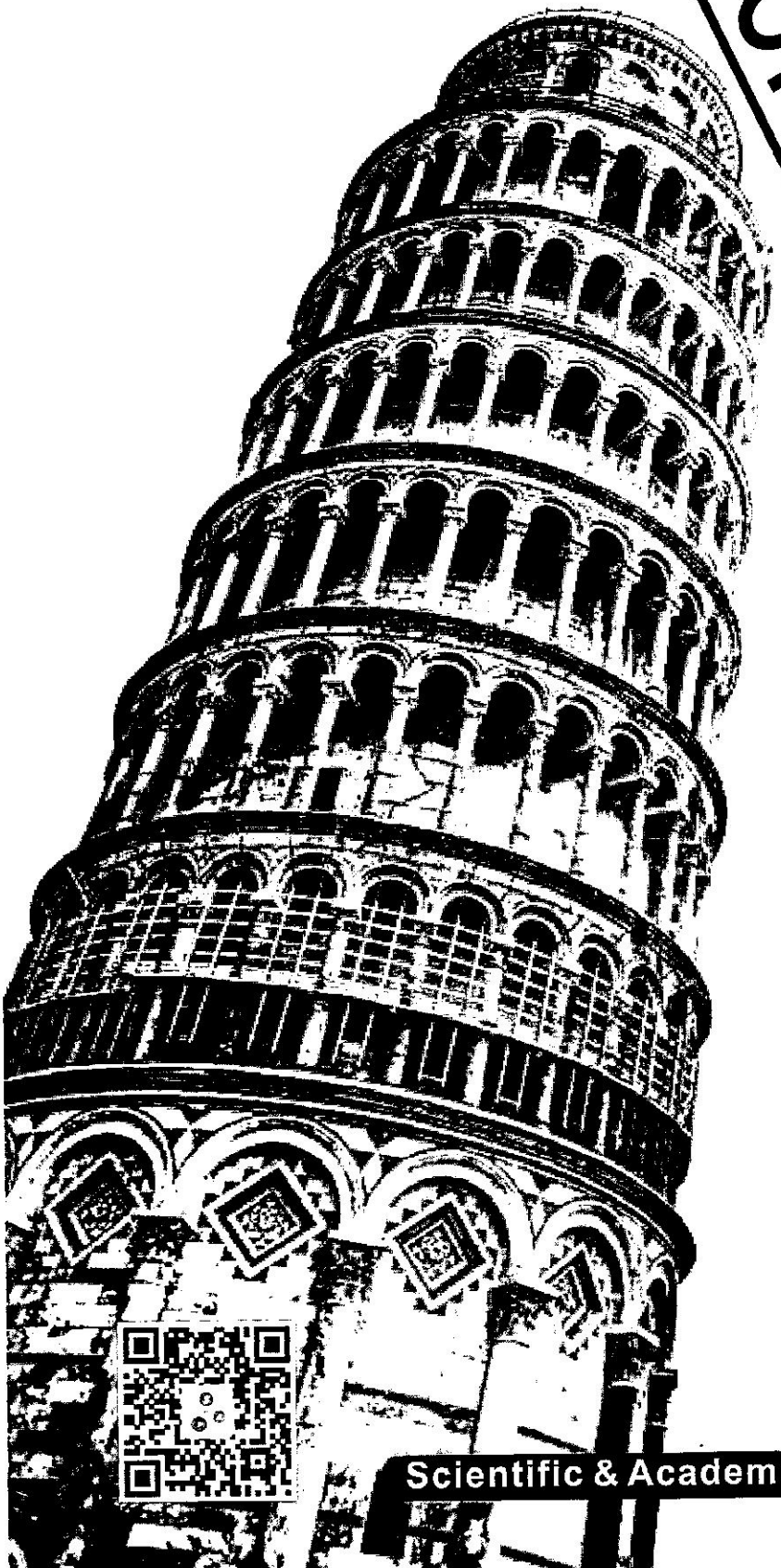

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User Perception of Location of Facilities in Public Building Design in Selected Cities in Nigeria

Adedayo O. F.*, Ayuba P., Audu H. I.

Department of Architecture, Federal University of Technology, Minna, Niger State, Nigeria

Abstract Public buildings designs in Nigeria vary based on the activity that is conducted therein. The designs for such buildings are commissioned by the owners or the government and the architects that work on such designs usually satisfy the needs of the clients with little attempt at meeting the needs of the prospective users. A common user problem with the design of public building is the location of facilities. The aim of this paper is to determine if the user of public buildings are satisfied with the design decision taken by architects. A survey was conducted using questionnaire method to elicit the opinion of the end users regarding the buildings while data was analysed using SPSS. The results reveal that the 84% of users were not satisfied with the arrangement of facilities while 83% considered ease of movements as being poor. It was discovered that the lack of consideration of the end user in the design led to the poor rating of the buildings. The paper concludes that there is need for user participation in public buildings provision in Nigeria and it should be a criterion before building approval is given for the construction of such buildings.

Keywords Architects, Design, Facilities, Participation, Public Building, Users

1. Introduction

An increase in the growth of the urban centres in many countries always comes with an increase in construction be it private buildings or public buildings. In Nigeria, the design and construction of privately owned residential buildings the client is often the user and the facilities to be provided are discussed and approved by him, this is however not the case with public buildings, in public buildings there are usually wide range of users and the client is just one of the several, however it is client that gives the approval for the design. This is why architects involved in design of public buildings in Nigeria usually make little attempt to satisfy the prospective users of the building aside from meeting required standards.[14] viewed a public space or building as a place where variety of different activities can be carried out and that it is not necessarily the ownership status of the place that determines the public status of a space. This implies that any building that is open to the public to make use of can be considered as public building examples of such buildings include hospitals, religious buildings, office buildings, shopping malls and transport stations. The designs of these public buildings vary and often times the users of these buildings are forced to adapt to the buildings in terms of its usage. The facilities within these buildings are placed at the discretion of the architect, the problem with this arrangement is that the larger the building the more the inconveniences because people would have to start looking for signs or ask for directions to locate public facilities such as toilets, stairways and in some cases exit doors or ways. It implies that the design cannot be considered as being good because according to a 2006 report on Better public buildings,[2] "Good design is inclusive: it results in places where everyone can participate equally, confidently and independently in everyday activities." The use of this statement in the examination of the public buildings in Nigeria will reveal that the public buildings are not considered as good design because oftentimes they are not inclusive. This paper however seeks to examine the aspect of the location of facilities within selected public buildings in Nigeria from the user's perception, with the view of determining the success of the design. This should give an idea of what problems are being faced and possible solutions provided.

1.1. Public Building Provision in Nigeria

Public building provision in Nigeria is an aspect of the construction industry that is government driven with the Federal government and State governments embarking on the construction of offices for either new agencies or expansion of existing buildings for existing agencies. The large private companies are also involved in the provision of office complex for their staff or the development of public building particularly for commercial purposes. The implication of these two major players in the construction of

* Corresponding author:
arcadedayo@yahoo.com (Adedayo O. F.)
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the public buildings is that the architect focuses on their needs and aspiration and the end users are not considered in the loop, because cost is a major consideration for these clients. According to[8], the needs of everyone in the society should be considered and provided for in the design of public buildings in Nigeria. It further stated that architects working on public building designs in Nigeria usually focus on the aesthetic value of the building at the expense of the end users needs. This view can be viewed as part of the reasons for the type of public buildings found in Nigeria where architects and building owners try to outshine each other with every new construction. The accessibility to, and within the building is usually determined by the architect and often times this fails to meet the needs of the users of such public buildings. According to[5], a key principle for the design of buildings is that it meets the requirements of the owner while satisfying the public health, welfare and safety. It is however the owner's satisfaction that forms the basis of public building designs in Nigeria because there is no known process for getting the users involved. It is also common to find that most architects working on public buildings are not carrying out a Post Occupancy Evaluation (POE) of the buildings they have designed and constructed to determine the success or failure of their designs. A common practice in many public buildings design in Nigeria is to locate the conveniences away from to the entrance and often times, first time users of such buildings need to ask for directions. The use of symbols is not common in public buildings in Nigeria particularly those that are over ten years old except in cases where they have been renovated within the last ten years. The location of stairways, lifts and entrance doors affect how users rate the building and how they can easily relate with co-workers and it also affects their perception of privacy.

1.2. Workplace Environment

The workplace environment is an important aspect of productivity with regards to how people perform their duties, if the environment is conducive for the occupants it is likely to have high productivity. However in Nigeria little attention is paid to this aspect particularly in the public sectors, while some operators in private sectors have paid good attention to this aspect. According to[7] a worker's productivity and satisfaction at work is affected by the physical environment of his work place. It further stated that psychologists conduct research between the physical environment, getting to work and stress at work. A key factor responsible for physical environment of the workplace is the design of the building which involves the location and arrangement of the facilities within the building. In cases where people are not satisfied with their workplace they tend to have little value for themselves and works and this would affect how they discharge their duties. According to[4] the perception and assessment of workplace by the workers affect their professional effectiveness. It is this professional effectiveness that visitors to these offices use to rate the services of the establishment which determines the image of the organisation in public view. According to[13] for a workplace to be considered as performing it should be designed to optimise workers productivity. It implies that for the design of public space to meet the requirement of being considered as a good workplace environment there is need to examine the people who work there and understand the processes involved in their daily activities.

1.3. User Participation in Public Building Design

The need for user participation in design has become a major topic for discussion among architects in recent times because the buildings are now treated as a product. However this issue has often been the focus in the area of housing because of the prevalent transformation that occur within this sector. The use of community participation is what is usually advocated when it comes to public building or planning of an estate or community. According to[15], in participatory design which is an example of community participation, the people who are expected to make use of the project should be given an opportunity to make input. The benefit of this action is that the designer will have the opportunity of co-designing with the users and providing exactly what is required by them and the users will be able to relate with the project. The major problem of getting the users involved in the design of public building is the diverse needs and requirements and how to cater for all the issues that would be generated. An examination of some researches in the development of design process for buildings will show that the definition did not account for the users, because according to[1] building design and construction process involves professionals working together for a period of time. However[12] has stated that building practices overtime have undergone great changes because of the dynamism of humans that use such buildings. This view shows why there is a shift of focus to users because only then would a building be considered functional. The design process that allows for the inclusion of users in the design of the public buildings is no different from the ones applied in the field of housing. According to[11], "Statutory public involvement in development planning was introduced in the 1068 Town and Country Planning Act, following a crisis of confidence in land use and transportation planning, with fierce battles over slum clearance, housing redevelopment and motorway proposals." This statement shows that in order to solve the problems associated with public spaces or building design there has to be a way of including the end users in the process. Many researchers[9],[3],[6] &[10] have advocated that the users should be involved at the conception stages of the design and this can be done through creating open designs for users to modify, use of questionnaire to gather information regarding location of spaces and circulation patterns. In some cases options for the designs are provided for the public to view and pass comments. It is safe to assume that because the users selected the options they want in the design of their public building they are most likely to select options that would ensure that facilities are properly located in the

building.

2. Research Method

The paper discusses part of the research findings of the study of users' perception of public buildings in selected cities such as Abuja, Minna, Kaduna and Calabar in Nigeria. It was determined that the public (user) were not part of the design process of public buildings and this greatly affected the use of the buildings. The researchers sought to find out how the users perceive the location of facilities in various public buildings with the view of determining if the design met their needs. POE method was used with the aid of questionnaire and observation instruments. This method was suited for the research because it saved time and allowed the researchers to compare the answers provided by the respondents, with what was observed. The limitation of this method is that it required the researchers to travel to all the cities to ensure that the research assistant did what was required. Part of the limitation of the study is that majority of the top executives of the organisations in the buildings were not willing to participate in the study. A total of 200 copies of questionnaire were administered while 94 copies were returned. The data was analysed using SPSS because while the results are presented in tables and pie charts.

3. Discussion of Results

Table 1. Distribution of Surveyed Public Buildings

Type of building	Frequency	Percent	Valid Percent
COMMERCIAL	31	33.0	33.0
INSTITUTION	12	12.8	12.8
GOVERNMENT SECRETARIAT	25	26.6	26.6
BANK	8	8.5	8.5
HOTEL	8	8.5	8.5
OTHERS	10	10.6	10.6
Total	94	100.0	100.0

Source: Authors (2013)

The discussion of the results is based on the cross tabulation of the type of users with the different variables that sought to describe the location spaces. It can be observed from table 1.0 that the public buildings studied were distributed among five major types with the option for OTHERS to cover other types of buildings that did not fit into the stated categories. The banks and hotel buildings had the least number of respondents because of the privacy level and restrictions put up by the operators of such facilities. The government secretariat was a major category for study because it accounts for accommodating a large population of the workforce in the civil service. The major complains about public building designs in Nigeria is usually from those people who make use of the government secretariat and commercial buildings.

3.1. Ease of Space Identification

In residential buildings it is common for the first time visitor to a house to ask for directions around the house and if the visitor is someone that would spend some time the host usually shows the person round the house. In the case of public buildings nobody is saddled with the responsibility to show people around the building, it is common practice to put up labels for each space, office or shop. In some public buildings there are labels provided to give directions to the users, this is common with hotels while in government secretariats this is usually not available. The perception of the respondents in table 2.0 shows that 94% of staff of public building rated the identification of the spaces as being either good or very good. This is probably due to the level of familiarization they have reached with the building. In the case of visitors and others it is observable that the reverse is the case because for these group of users they are new to the building and have faced difficulty in locating the office they sought for.

Table 2. Ease of identification of Spaces in public buildings

		EASE OF SPACE IDENTIFICATION			
		VERY POOR	POOR	GOOD	VERY GOOD
TYPE OF USERS	STAFF	1%	5%	72%	22%
	VISITOR	36%	50%	14%	0%
	OTHERS	50%	36%	7%	7%

Source: Authors (2013)

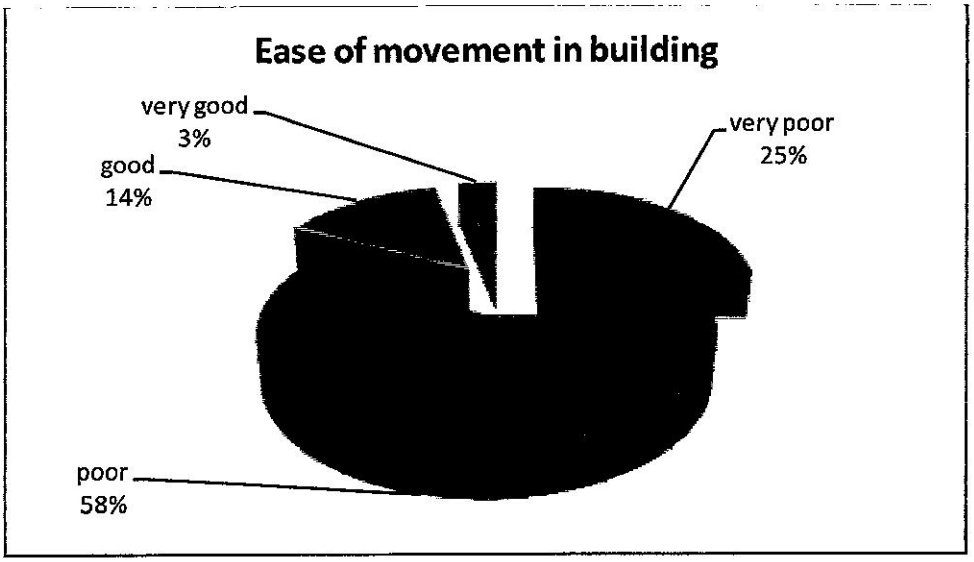
3.2. Ease of Movement within Building

An examination of the ease of movement of within the buildings as shown in table 3.0 reveals that a high percentage of the staff and the visitors of public buildings consider ease of movement as being poor. This perception has to with the space provided for circulation and the location of offices that are inter-dependent being sited far from each other. In some cases the location of the conveniences at the end of the corridor is of great concern to people whose offices are located at the other end of the corridor.

Table 3. Ease of Movement within Building Interior

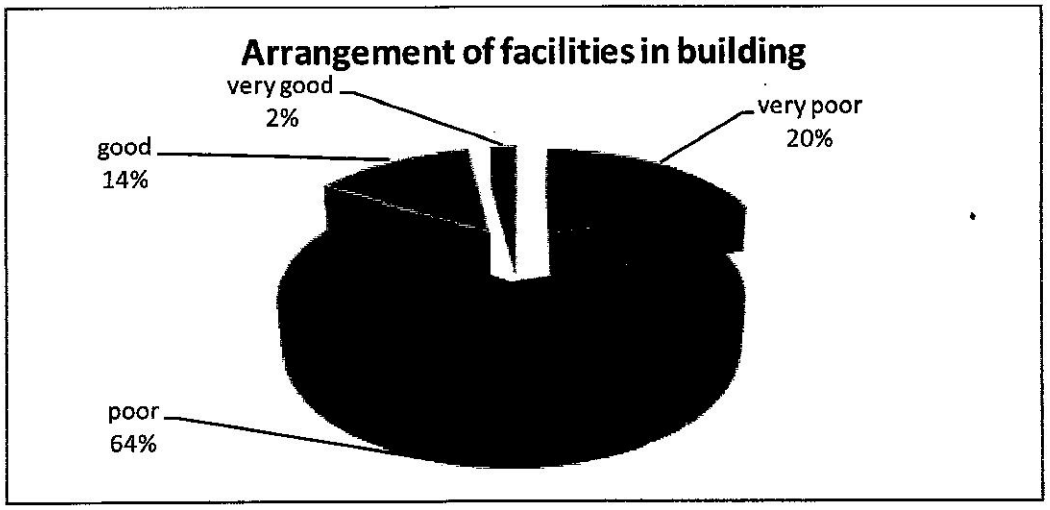
		EASE OF MOVEMENT IN BUILDING			
		VERY POOR	POOR	GOOD	VERY GOOD
TYPE OF USERS	STAFF	29%	60%	11%	0%
	VISITOR	22%	57%	21%	0%
	OTHERS	13%	47%	20%	20%

Source: Authors (2013)



Source: Authors (2013)

Figure 1. Average perception of ease of ease of movement within buildings



Source: Authors (2013)

Figure 2. Average perception of arrangement of facilities in building

In figure1.0 the average perception of the ease of movement is considered as good or very good by 17% of the respondents. In the commercial and secretariat buildings the size of the lobbies and corridors affected their movement because of the number of people who make use of such buildings. The bank buildings got a good rating in terms of movement because of the open design concept adopted for the work environment; this enabled both staff and visitors to just move from one table to another.

3.3. Arrangement of Facilities in Building

The arrangement of facilities in the building is directly related to the ease of movement. In the case of arrangement of the facilities such as toilets,,tea room, visitor's room, stair hall, exit doors and entrance lobby. A high percentage of staff were satisfied with the location of the entrance lobby but were not satisfied with the location of the exit doors. In some of the buildings examined the exit doors were permanent locked and this was observed as posing a great danger to the users in case of emergency. Respondents whose offices or shops were close to the conveniences did not like such location because of cases of improper maintenance of such spaces and they were of the opinion that conveniences should have been provided in each office or shop. A few respondents were of the opinion that conveniences should be designed like an office with a large lobby used to access such places and a door provide to link the lobby to the corridor, this suggestion was for commercial public buildings in particular. In summary from figure 2.0 the respondents did not consider the arrangement of the buildings as being adequate because it is only 16% of them that rated it as being either good or very good.

3.4. Adequacy of Reception Space

It is common to find two or more people sharing an office in government secretariat and the issue of privacy arises. In some banks and hotels there was provision of visitor's waiting area and this was used by as many people it could

take at a given time. The other option for many users of public building is to make use of the reception area to entertain visitors. The size of the reception usually determines the type, nature and number of seats that could be placed in the space. Table 4.0 shows that a high percentage of staff and visitors consider the spaces available at the reception as being poor because there is no privacy and in some cases the visitors are made to stand. In some buildings visited there is only a single reception on the ground floor regardless the number of floors. It was suggested that a reception be provided at each floor or wing of the building to take care of the users and reduce the congestion that may arise. A further investigation of some of this public buildings showed that it is usually the head of the unit in government secretariat that has another reception attached to his office.

Table 4. Perception of reception space

		ADEQUACY OF RECEPTION OF SPACE			
		VERY POOR	POOR	GOOD	VERY GOOD
TYPE OF USERS	STAFF	27%	62%	8%	3%
	VISITOR	23%	54%	23%	0%
	OTHERS	0%	50%	43%	7%

Source: Authors (2013)

3.5. Car park Distance to Building

The common practice in many public buildings is to have separate car parks for the staff and visitors and there is usually no surprise when a visit is paid to any of the public buildings, the staff car park is strategically located close to the building while that of the visitors is located far away or in some cases outside the perimeter fence of the building. The problem with location of these car parks is usually not evident until a visit is paid to the public building during a rainy day or a very sunny day. It is therefore no surprise from table 5.0, that 84% of staff rated the distance of the car park to the building as being either good or very good while the reverse is the case with the visitor. A few of the respondent complained about the lack of covered walkways from the car park to the entrance porch of buildings as was the case for Executive officers or owners of the buildings who could drive to the porch or had covered access to the building.

Table 5. Perception of Car park distance to building

		RATING CARPARK DISTANCE TO BUILDING			
		VERY POOR	POOR	GOOD	VERY GOOD
TYPE OF USERS	STAFF	5%	11%	58%	26%
	VISITOR	14%	57%	22%	7%
	OTHERS	27%	40%	20%	13%

Source: Authors (2013)

4. Conclusions

In conclusion the results show that the users of public buildings are generally not satisfied with the building design and design decisions taken. It implies that the building has failed to meet the majority of the needs and aspirations of the user of the public buildings in the selected cities. The implication of this failure of the building design is that the worker's productivity is affected. In terms of space requirement the workers considered the spaces as being inadequate because they found it difficult to carry out their daily activity this implies that the designers of these buildings did not take time to understand the processes involved in the activity of the organisation and providing for it in the design of the building. The commercial buildings had the highest cases of complain during the interview because most of the public spaces within the commercial buildings were not properly defined. The location of the toilets and the entrances was also a source of concern to the users because it placed certain shop owners at disadvantage to the others. In the government building the issue of seniority usually determined the choice of office location and the level of facilities to be enjoyed. The junior workers who undertake majority of the work of the organisation are often not cared for which affected how they viewed their office and how they related with visitors to the establishment. The consolation for this category of workers (respondents) was the opinions that even though the facilities fell short of their desire, they would one day rise to the management level of the organisation thereby enjoy the better facilities. This type of situation is abnormal, which could be corrected if the designs of public buildings are user (workers) oriented with emphasis on high productivity. The problem with dissatisfied users of public buildings (customers or staff) is that it has a way of affecting productivity, sales and efficiency. There is therefore the need to ensure that all the users of public buildings are sought for and given the opportunity to participate in the design of the building. This need will definitely alter the design process of the building however it will result in the provision of a public building design that satisfy a large percentage of the users.

5. Recommendations

The summary of the discussion of the results show that there is need to introduce community participation in the design of public buildings in Nigeria. The process should begin with identification of potential users of the building and inviting them to participate in the design through the submission of requirement for the proposed building. The submission of such requirements should be used to develop the design brief for such projects. When the architect finishes the design, the proposed design should be displayed at a place where prospective users can make comment or in some cases as practiced in developed countries a community meeting in the form of town hall meeting be called. The meeting will afford the architect to make a presentation to the public and also he would get feedback in the form of questions. The cost of such meeting should be included in the

overall cost of the project and the decisions reached should be documented. The provision of phone boots in open office should be encouraged so as to create a private environment for the users of such buildings. The government could also use competition method as a means of selecting the design for any public building to be constructed.

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