

## **ARCHITECTURE AND AGEING: SUSTAINABLE HOUSING FOR THE ELDERLY IN NIGERIA.**

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### **Abstract**

The architecture of housing for the elderly though has become a global phenomenon is still a relatively new concept in Nigeria. This paper developed a framework for the design of housing for the Elderly in Nigeria using the principles of universal design, practice design and biophilic architecture. The methodology of study include both theory and practical involving review of literature, case studies; use of questionnaire to collect information on the desirability of the project and architectural design principles to formulate and produce design model for elderly housing in Nigeria. Purposive sampling was used to select 100 respondents aged 55 years and above. Findings revealed that out of the few old people's home in Nigeria, there is no state owned or purpose-design housing for the elderly. The study recommended that due to the less care and attention from children to their aged parents as a result of work pressure, privacy and other engagements, there is the need for the establishment of elderly housing across the cities and urban centres of Nigeria to give the desired care to the elderly.

**Key words:** Biophilia, health, housing, elderly, retirement home, universal design,

## **Introduction**

Architecture is a multi-disciplinary profession that is connected and related to virtually all other disciplines including health. Thus, the subject of ageing which is health-related has its basis and solution in Architecture as well. In several countries across the globe, the quest and demand for aged housing is increasing. In Europe, the population of the elderly is increasing by the year from 20% in 2015 to about 25% in 2040 [1]. In the United State of America, the population of the elderly in 2009 is put at 39.6 million and it is expected to rise to 72.1 million in 2030 [2]. Today, the highest increase in the aged population is in the developing and middle-income countries. Nigeria, being the most populated in Africa account for the highest number of the aged population. The rise in the elderly population is also significant as the life expectancy age has increased to 63 years [3; 4].

However, the increased population of the elderly in countries is not unconnected with the increase in health care delivery, awareness of the individual on the need to live healthy and the various programmes sensitizing and stimulating the aged to live independently at home without limitations [5].

Housing for the aged/elderly also called senior housing, retirement home; nursing home or old people's home means a facility that is designed and constructed specifically to provide shelter and accommodate the elderly, aged 60 and above. Elderly or old people's home is alien to Nigeria traditionally, hence, there are no documented data on the existence of such homes in Nigeria; except for the fact that the few 'Old People's homes had its origin in Ibadan before spreading to cities like Lagos, Benin, Warri, Enugu, Asaba, Kaduna and Kano, most of which are regarded a 'Care Centres and affiliated to Missionary body [6]. These centres are either converted residential houses or part of other institutional buildings; thus, there are no known architecturally designed Aged housing across Nigeria.

Accordingly, ageing which is an interdisciplinary study due to its biological, economical, sociological, psychological and environmental affiliations has become a global phenomenon and a critical policy matter currently receiving attentions by various governments across the world including Nigeria. In the United Nations' agenda, ageing is a major component, as the International Plan of Action on Ageing

held in Vienna, Austria in 1998 and the 2<sup>nd</sup> World Assembly on Ageing held in 2002 in Madrid Spain contains 'housing and environment' for the aged as one of its recommendations.

The effects of the environment on age and health cannot be overlooked as human constant interactions with the living environment especially the aged have a considerable impact on the behaviour and state of wellbeing. In addition, it has been observed that staying close or connected to natural environment improves ones sleeping pattern, minimize pains, accelerate healing process and enhance longevity [7].

Therefore, the focus of this study is providing a suitable framework for the design of a sustainable 'Aged Housing' that will meet the environmental, psychological and therapeutic needs of the elderly in Nigeria. The proposed design shall be based on the principles of sustainability anchored on universal design and practice design principles (which involves other considerations such as economic, cultural etc) as well as biophilic architecture.

## **Literature Review**

The architecture of health and by extension ageing is not really a new concept but recently it is beginning to attract significant and global attention especially as the population of the elderly is increasing yearly. Architectural designs has been known and acknowledged to promote the health and wellbeing of humans and complementing governments' efforts in dealing with health challenges, ageing and quality of life [8].

The old tradition of replicating design and construction models and the lack of proactive response to the anticipated needs of end-user of construction by designers and architects has been criticized lately across the globe. This criticism has resulted in a drastic shift in the architectural designs and construction towards the direction of housing for the elderly [9]. Thus, guidelines for architectural designs are being developed in collaboration with other disciplines, building codes are being reversed and updated to accommodate accessible and evidence-based designs for the elderly in society including age-related health challenges such as dementia; anxiety, strain, confusion and way-finding [10; 11]. To this end, the International Association on Housing for the Ageing and architectural bodies across the developed

nations of the world are championing the campaign for the design of ageing population through sponsored design competitions, innovative practice and publications [12].

Architecture for the ageing (which is sometimes referred to as senior residence, nursing homes or retirement homes) is a concept of supportive housing which is a description of a range of purpose-constructed housing or environment that offers series of care services for the elderly day to day living activities. It is simply a housing constructed for individuals with ageing challenges and declining physical abilities. Supportive housing is preferably cheaper for the elderly compared to long-term care facilities which most senior citizens cannot afford. But there is usually a relationship between these housing options as both shares in the functional efficiency that is hinged on central care services for the elderly. Thus, this is in agreement with the principle of quality of space being upheld as against rationality and economy [13].

On the acceptability or popularity of housing for the elderly in Nigeria in particular and Africa in general, it is said that this concept is alien and not traditionally a Nigerian concept but that of the European culture. According to [14], taking a loved elderly one to another strange place in the name of elderly home is a difficult and emotional choice to make and which is not African in nature; a situation that suggest rejection and neglect of the elderly by their close family members.

In the African culture, the care of the elderly falls within the ambit of the extended family members. But the only point of acceptance recently is the fact that there is a decline and shift in the economy, and gradual disintegration of the extended family system due to employment opportunities and rural-urban migration in search for greener pasture, which had negatively affected the usual care-giving task for the elderly [4].

Also justifying the need for elderly housing, [15] opined that the aged may want to economize due to decrease in living space when kids grow and leave the house or because of reduced income after retirement. The anticipated decline in mobility, increased health challenges due to ageing could make the elderly find accessibility, comfort and safety in an entirely different housing and environment [16];

17]. The likeness or need for shared facilities, making more friends, social interactions and recreation could also be reasons for the acceptance of the elderly housing [18; 19].

The review also dealt with the design of appropriate spaces required by the elderly using the principles of universal design and practice design principles. The design of products and creating the environments that is utilizable by all people to the maximum degree possible without the need of alteration or specialized design is called universal design. This principle is ideal due to the fact that it focuses on the human structure as well as the will to provide equal opportunities in creating the relationship between spaces, equipment and the users [20]. However, certain alterations are necessary to home design to accommodate ageing people for safety and simplicity of living in accordance with the practice design principles. These alterations may include wider doors and hallways, brighter lighting, handrails in strategic places, hand-held showerhead, pull-out shelve cabinet etc [21].

Humans (especially the aged) and nature are met to relate; thus experts suggests that staying connected to nature/ natural environments help to improve the sleeping pattern of the aged, facilitate recovery process, reduce pains and enhance longevity in humans [7]. Elderly people living in the urban centres have disconnected themselves from nature; this is because nature and urban settings have become far apart by the development process and pattern. Most people spend most of their times, hours either in the offices, shops, markets or indoor at home thereby shutting out nature completely by their lifestyle. The architecture of health which is anchored on health and architecture relationship cannot be abandoned under any circumstances because any disconnection of man from nature is always detrimental to health, strength of mind, economy and the future of the urban environment [22; 23; 24]. This is why the architecture of biophilia is a welcome development as it is based on the principles of sustainability, which emphasis construction methods with less impact on the environment and advocate human reconnection to nature [25]. Sustainable housing development is gradually promoting the culture of humans becoming close and related to the environment and natural elements which this proposed elderly housing design is anchored on.

## **Methodology**

The methodology of study include both theory and practical involving review of literature, use of questionnaire to collect information on the desirability of the project and architectural design principles to formulate/produce design model for elderly housing in Nigeria. The questionnaire survey involved 200 structured questionnaires distributed by Purposive sampling to respondents aged 55 years and above. Some of the respondents are in their last few years of retirement from active service and those that have retired including the unemployed, farmers and traders. The 5-point Linkert scale method of questionnaires namely strongly agreed (SA=5); Agreed (A=4); Unsure (U=3); Disagreed (D= 2); and Strongly Disagreed (SD=1) was used.

Out of the 200 questionnaires distributed, 145 were returned representing 72.5% which is considered a good response rate. The questionnaires were analyzed using the Relative Importance Index (R.I.I) by applying the formulae

**R.I.I =  $(5n_5 + 4n_4 + 3n_3 + 2n_2 + n_1) / 5N$** ; Where:  $n_5$  = Strongly Agree (SA);  $n_4$  = Agree (A);  $n_3$  = Unsure (U);  $n_2$  = Disagree (D);  $n_1$  = Strongly Disagree (SD); N = number of respondents.

## **Discussion and Findings**

The discussions and findings shall be presented under two sub-sections namely the analysis of the collated data using the Relative Importance Index (R.I.I) and the analysis of the design concept respectively.

Table 1 below show the relative importance index of the desirability or otherwise of the aged housing in Nigeria as opined by the respondents across the study area, Calabar, Cross River State. Out of the 21 structured questions/opinions, the rankings is based on the opinions of the respondents as expressed which is an unbiased decision as revealed by the data retrieved. The opinion with the highest R.I.I becomes the most significant.

Thus, from the computed Table 1, there are no purpose-design and constructed aged home in Nigeria is ranked 1st with R.I.I of 0.9660; Aged home is important in our society is ranked 2<sup>nd</sup> with R.I.I of 0.9600; Aged home is unfamiliar with our culture is ranked 3<sup>rd</sup> (R.I.I =0.9520); Aged home can reduce death rate among the elderly is ranked 4<sup>th</sup> with R.I.I of 0.9500; Aged home is the solution to elderly neglect in the society is ranked 5<sup>th</sup> with R.I.I of 0.9450; Keeping the elderly in the aged home does not signify neglect by the relative is ranked 6<sup>th</sup> (R.I.I = 0.9400); Aged homes help to solve the problems associated with ageing process is ranked 7<sup>th</sup> (R.I.I =0.9370); while the 8<sup>th</sup> ranking with R.I.I of 0.9340 is ‘Aged home increases elderly intimacy with peers’, the 9<sup>th</sup> ranking with R.I.I of 0.9172 is ‘Aged homes reduces relations’ stress of caring for the elderly’; the 10<sup>th</sup> ranking (R.I.I = 0.9150) is ‘Traditionally, aged home does not allow intimacy between the elderly and relation’

From the rear, the 21<sup>st</sup> ranking is ‘I prefer family home care than the aged home care’ has R.I.I of 0.7500; this is followed by 20<sup>th</sup> ranking of R.I.I= 0.8414 ‘Nigerian govt. encourages her citizens to patronize aged homes’ and 19<sup>th</sup> ranking with R.I.I of 0.8441 is ‘Nigerian govt. encourages the establishment of aged homes’

From the above results and rankings, it can be implied that although aged homes exist in Nigeria, there are no purpose-designed and built aged homes meaning that those existing are converted apartment. Also, the result revealed the importance respondents no place on the need for aged homes in Nigeria. The third ranked variable which is ‘Aged home is unfamiliar with our culture’ is absolutely true and cannot be disputed by anyone from this part of the world but the fourth and fifth rankings up to the tenth rankings unarguably proved the desirability of aged homes in Nigeria.

The findings also revealed that government at all levels does not encouraged the setting up of aged homes neither do they encourage citizens to patronize aged homes in the country which is why they are ranked 20<sup>th</sup> and 21<sup>st</sup> positions respectively.

**Table I:** Relative Importance Index of Opinions for Establishment of Aged House in Nigeria

S/N	Description of Opinion	1	3	3	4	5	RII	Rank
1	Aged homes are in existence in Nigeria	0	0	18	42	85	0.8950	15
2	Aged home is unfamiliar with our culture	0	0	0	35	110	0.9520	3
3	Aged home is important in our society	0	0	0	30	115	0.9600	2
4	Aged home is the solution to elderly neglect in our society.	0	0	5	30	110	0.9450	5
5	Nigerian govt. encourages the establishment of aged homes	0	0	20	63	60	0.8441	19
6	Nigerian govt. encourages her citizens to patronize aged homes	0	0	40	34	70	0.8414	20
7	The aged homes in Nigeria is in deplorable state	0	5	10	30	100	0.9103	11
8	Aged homes reduces relations' stress of caring for the elderly	0	0	5	50	90	0.9172	9
9	Aged homes help to solve the problems associated with ageing process	0	0	0	46	99	0.9370	7
10	Traditionally, aged home does not allow intimacy between the elderly and relation	0	0	5	45	95	0.9150	10
11	Aged home increases elderly intimacy with peers	0	3	7	25	110	0.9340	8
12	I prefer Aged home to traditional way of caring for the elderly	0	0	15	36	94	0.9100	12
13	I prefer family home care than the aged home care	0	0	65	55	25	0.7500	21
14	Keeping the elderly in the aged home does not portent adequate care	0	0	10	70	65	0.8800	17



15	Keeping the elderly in the aged home does not signify neglect by the relative	0	0	0	47	98	0.9400	6
16	Aged home care can reduce early death rate among the elderly	0	0	0	40	105	0.9500	4
17	The Nigerian govt. has policy guiding the care for the elderly in the aged homes	0	0	15	55	75	0.8830	16
18	Most of the aged homes in Nigeria are established by religious organization	0	0	15	38	92	0.9000	13
19	The Nigerian govt. encourages privately-owned aged homes	0	0	18	40	87	0.8952	14
20	Govt. owned aged homes are better managed than privately owned	0	0	0	89	56	0.8772	18
21	There are no purpose-design and constructed aged home in Nigeria	0	0	0	25	120	0.9660	1

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**Source:** Authors' fieldwork, 2020

### **Analysis of the Design concept of the proposed Elderly Housing**

The proposed elderly housing is to be located at Water intake road, Lemna, Calabar, Cross River State, Nigeria. The site layout is properly designed to exhibit features of 'nature' and reflect natural environment cum cultural affinity to give the occupants an ideal home indeed. The layout in figure 1, comprises the following among others:

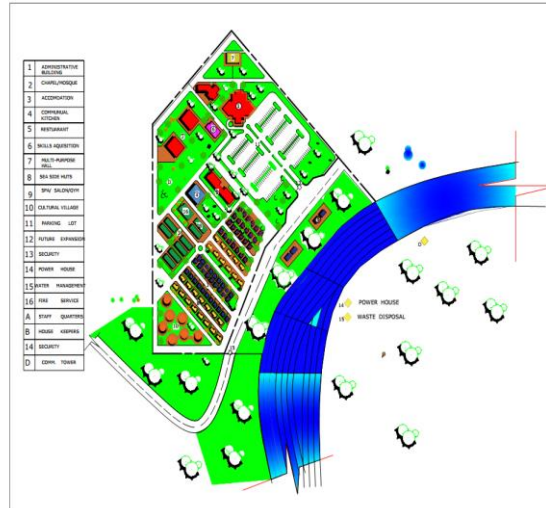


Figure 1: Site layout of the proposed Elderly Housing, Calabar

Source: Authors' fieldwork, 2020

a. Water Park: The site has an existing water font/park with a gentle glow that gives the layout its beauty. The park is host to some beautiful landscape elements almost making its daring look as touching the horizon. The cool breeze from the trees and vegetation gives the occupants pleasant rest all day long. It provides outdoor activities area and relaxation.

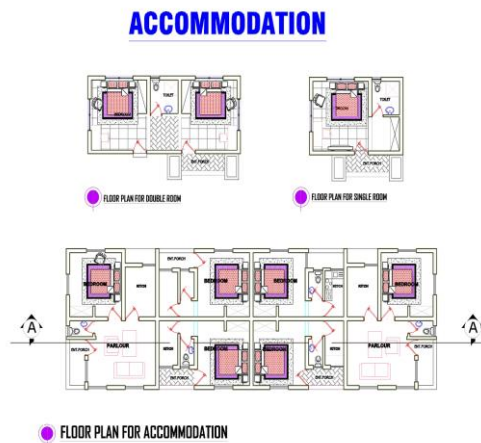


Figure 2: Floor plans of accommodation of the proposed Elderly Housing, Calabar

Source: Authors' fieldwork, 2020

b. Accommodation: The layout is made up of beautiful array of bungalows with exceptional exciting views on every facade. It accommodates occupants in the facility. The accommodation types in Figure 2 and 3; are single rooms; double rooms; executive rooms. This pattern is a typical representation of a home setting that is relative to the perceived standard of living of occupants outside the facility.



Figure 3: External views of the proposed Elderly Housing, Calabar

Source: Authors' fieldwork, 2020

c. Administrative Block: This consists of various offices and open floor spaces for various activities. It is a one-stop hub for all the occupants for enquiries, complaints and relaxations. It is therefore situated within the facility in a linear pattern of the landscape park spaces and also playing host to the well equipped medical facility. Its architectural building material is sandcrete blocks and 60% glass. The use of glass gives a clear reflection of time and changes in age as the visitors have a clear reflection of their lives off and on their youthful strive.

d. **The Mini-Village:** The proposed elderly home layout is home to a beautiful traditional village just like a resort (African theme). Here, the materials for construction are mud, thatch and bamboos. The occupants enjoy an endless nights of fun and also day time of pleasant music, dance and craft. African delicacies and wines served in traditional bowls, with introduction of bamboo seats and floor mats just to depict culture. The village is one of the many unique features of the old peoples' home.

e. **The Farm:** The farm setting is another unique feature in the layout. But here, only vegetables and arable crops planted are for immediate consumption is cultivated. This gives the occupants more time to socialize, reminisce old times and serves as minimal exercise routine for dedicated hours. This gives the occupants a feel of 'home' away from home.

f. **Communal Kitchen:** Here in the facility, there is a kitchen different from the regular indoor kitchen design. The kitchen is made of thatch and African bamboo. Occupants and stewards come together to cook meals using firewood, coal and gas methods of cooking. This is another way to foster inter-independence and oneness.

g. **Religious Centre:** Just about five minutes walk from the accommodation width of the facility are two beautiful bungalow buildings (Church and Mosque) representing the two major religions in Nigeria, Christianity and Islamic religion. The worship places are exclusive for daily prayers and other internal worship (personal) and prayer times.

Other facilities in the layout include; parking lots for visitors/occupants, skill acquisition, mini-supermarket; saloon; gym; sea-side huts, fire service station, staff quarters and security post. The site is designed and planned to accommodate future expansions should the need arise.

## **Conclusion and Recommendation**

Undoubtedly, housing for the elderly, though a relatively new concept in Nigeria is gaining more attention and many people are realizing its significance in the society. Ageing is a natural phenomenon due to the dynamic nature of life. Therefore, the need for the design and development of centres to cater

for the elderly is a sine-qua-non. The benefits of home for the elderly cannot be overstressed as the aged, the care-giving family members and government are all positively affected.

The proposed framework for the design and provision of sustainable elderly housing in Nigeria should be embraced by all and sundry in order to move with pace of development in the world. In this modern civilized society, no parents wish their children to remain with them forever as they grow into adults, hence there is a time when aged parents will be left alone which necessitate the elderly housing. This proposed approach is adopted can minimize neglect of the elderly by both children and government and also increase life expectancy of the aged in society due to the care, interactions with new friends, environment and nature; this in turn will make for a robust society.

The government should encourage the setting up of elderly housing across the major towns and cities in Nigeria; by reviewing and strengthening the policies of the aged population. Private sectors should also be encouraged to construct elderly housing as part of corporate social responsibility so that both the government and private organizations should be seen to be interested in caring for the elderly in the society.

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