

The Contribution of Housing Ecology to Property Values

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Abstract

It has long been established that a tree does not make a forest the same way a house is not a home. The concept of the ideal role of an adequate housing facility within a human settlement cannot be located within the framework of the physical structure alone except other elements within the environment of the facility are considered. These elements commonly termed housing ecology define and to a great extent determine the livability of the house. This study examined the contribution of housing ecology to property values. Three housing estates in Owerri Imo State were sampled – Aladimma Housing Estate, Redemption Housing Estate and Graceland Estate. Chosen because of their unique locations in Owerri, analysis of environment and facilities in the neighbourhoods considered electricity/power, Water, Communication/Roads (internal and external), Waste disposal and management, leisure as well as jobs/employment. These were accorded 100% each and graded. The impact and contribution of housing ecology on the value of properties in the estates were analysed by recourse to valuation assignments executed by Estate Surveyors and Valuers within three years 2017-2019. Fifteen valuation assignments were chosen. These were undertaken on the common types of buildings within the estates – detached bungalow; semi detached duplex and detached duplex. As much as possible, properties of comparable styles, accommodations, quality and layout plans were chosen. Value averages of the different categories of properties over the period of the survey (2017 -2019) were reported. These were undertaken independently by different Estate Surveyors & Valuers within the period of the investigation for the purposes of determining the capital values of the properties which formed the subject matter of the assignments. Analysis of data gathered on housing ecology indicated that Graceland Estate had better ecological harmony and management (73.3%) by the provision and supply of the amenities when compared with Aladimma Housing Estate (57.2%) and Redemption Estate (47.5%) in that order. The result of data on valuation assignments conducted by Estate Surveyors & Valuers in the Estates within the years under review followed the trend of ecological harmony and management of the estates though with slight variations. The study concluded that housing ecology not only determines the management standard of an estate but also the harmony within the estate and invariably the increase in property values in accordance with the quality and availability of the facilities that make up housing ecology. The study recommended that estate developers and development agencies should plan their activities to revolve around the provision of amenities that will benefit the residents instead of developing the structures without paying proper attention to other facilities that make life worth living within and without the estates.

Keywords: *Valuation, Housing Ecology, Management, Property values, Facilities*

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Background to the Study

Since 1950 the population of the world has grown from 2.5 billion people to over 6 billion; a fifth of the top soil that makes it possible for us to grow the crops that we eat and feed to our domestic animals has been lost; a third to a half of all forests, depending on the region of the world, has been cut over; the characteristics of the atmosphere have been changed drastically, with thin spots in the stratospheric ozone subjecting us to damaging ultra-violet radiation and increases in carbon dioxide and other green house gases inexorably leading to global warming; and thousands of species of plants, animals, fungi and microorganisms are being lost forever with each passing year (Rave, Berg and Johnson, 1993)

Over the next decade 2030+, about 3 billion more people will be added to the world population, (Raven, Berg, Johnson, 2020) the greater majority of them in cities of the third world. Most of these people are likely to be condemned to a life of poverty and reduced expectations, as they cut over the remaining forests and exhaust the depleted soils of their native land.

Housing and urbanization impact heavily on the environment irrespective of the technology involved. Niedercorn and Hearle (1963) in McDonald and Mcmillen (2007) examined studies of land use in 48 urban areas in the United States of America and found that, on average 29.6% of all land and 39% of developed land in an urban area is the spatial pattern of its housing stock.

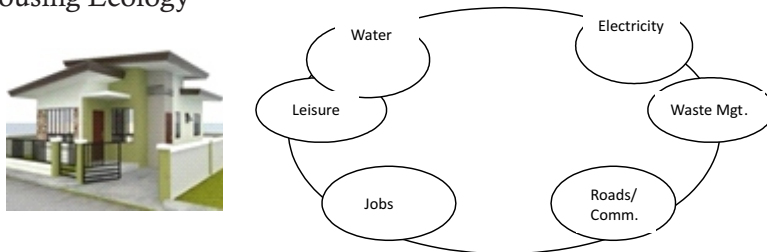
Housing expenditures, quality and price vary widely in urban areas around the world. Fanimu (2014), observed that the challenges facing housing with regards to quality and quantity seem to be replicated all over the world but the situation in Nigeria is hydra-headed. This in part is a factual result of the housing environment which non-the-less is termed housing ecology.

When the term ecology is applied to housing what is intended most of the time is the relation of the environment with the house which situates therein. In this regard the availability of communication (roads/rails /airways, radio/television/telephone); Income generating jobs (fishing, dying, weaving, etc); Energy (electricity, solar, biogas); Water (borehole, well, rain harvesting, etc); Hobby/Recreation (gardening, fishing culture, citrus planting, etc); Wastes (Recycling, Soak-away/septic tank, sewers, biogas input, etc) and other necessary attributes to good life are considered.

Literature Review

Egunjobi and Alabi (2007), described housing as a package bundle of facilities and utility services which are connected and or are inter-related in some ways. This is also the view expressed in Miller (1990), Knox (1989) and Okoronkwo (2016), thus the understanding that houses are valuable only when they are able to satisfy various variables of utilities and services incidental for harmonious livability.

Fig. 1: Housing Ecology



Source: Okoronkwo & Okoronkwo (2020)

Water is essential for life. It is food and thus one of the basic necessities. Water is important for the maintenance and sustenance of our metabolism as well as an insurance against most diseases and ailments. Without water, a lot of life will be lost against pestilence and breakdown of body tissues. The human body uses water in all its cells, organs, and tissues to help regulate its temperature and maintain other bodily functions, control breathing, sweating, and digestion and dehydration. It is important that water is supplied fresh through government reticulated reservoirs and boreholes although in this era of government incompetence in the management of public utilities, many people now provide individual supplies of water.

The supply of energy is crucial in the assessment of the value of housing. Electricity in Nigeria is generated through thermal and hydro power sources. The main source of electricity generation comes from fossil fuels especially gas which accounts for 86% of the capacity in Nigeria with the remainder generated from hydropower sources (Jarret, 1980). Electricity is central to the ability of almost all modern societies to function. Hospitals, air traffic control systems, street lights, modern sewage systems, most forms of communication and service industries are all dependent upon electricity. Nothing gives a house an honourable sense of security and pleasure than the availability of electricity which could be generated through several sources.

Communication is another important facility that affects the value of housing wherever and whenever. It implies the sending of messages and dissemination of information from one place to another. Human beings are always interactive. This being so, they require constant communication to keep afloat the vicissitudes of every day life. Communication plays an important role in the development of the cities. It reduces the distance and makes the flow of information faster. It also saves time, budget and labor. Information, ideas and opinions can be shared among many persons at any given time through modern means of communication which could be achieved through radio, television, telephones and the lot. Transportation is basic in promoting interaction between areas and by joining them economically and socially. Roads, railways, waterways and airways have played historically significant roles in promoting cities and housing. Getis, Getis and Fellmann (2002) conclude that the more economically advanced a country is, the more extensive its road network is likely to be. At the same time, the higher the level of development, the more money there is to be invested in building transport routes.

Nigeria has about 195,000 km road network out of which a proportion of about 32,000 km are Federal roads while 31,000 km are state roads according to Infrastructure Concession Regulatory Commission (2019) but only about 60,000 km are paved and of the paved roads, a large portion is in very poor and unacceptable condition due to insufficient investment and lack of adequate maintenance. Within cities are roads of different magnitudes and variable quality ranging from well built, long distance trunk roads to local roads of poor construction which may be unusable during the rains (Jarret, 1980). Road network is comparatively dense in cities than outlying areas and rural places. This may explain in one way or the other, the concentration of houses in the area owing to ease of transport communication. The lagoons and creeks of the coastal belts are navigable even for small ocean carrying vessels throughout the year and these provide unbroken communication between coastal cities. Houses located where there are good road networks, mobile phone services and other forms of communication have been proven to command higher rental values than others in not so privileged locations. (Okoronkwo and Okoronkwo, 2020).

Migration has always been necessitated by the push and pull factors of driving people from rural areas to cities and vice versa. One reason among others that engages people in the prerogative of mobility is the desire to be engaged in income generating activities. Thus more people are concentrated in areas that offer employment opportunities than others. With increasing concentration of jobs in the cities, people continue to flock. Housing in cities may be located wherever given adequate transportation facilities but people will most likely prefer houses that are located in places that are close to employment and income generating activities. Indeed, studies in India and Bangladesh support this assertion. The study (Spence, Wells and Dudley, 1993) revealed that places that exhibit the propensity for employment opportunities are preferred than others. Although, Knox (2006) pointed out that most people will want quieter and more reserved areas of the city they will consider proximity to places of employment first in their consideration of houses/accommodations.

Grebler and Burns (1977) observed that housing may serve not only as a stimulus to saving and investment among low income earners but also as a vehicle for the generation of additional income and wealth. For low income residents of most cities of the developing world, the house is not only a place to live but also a place to work. Thus, Strassmann (1987) reported that a quarter of urban households in Colombo (Sri Lanka) and Lusaka (Zambia) had home based enterprises with incomes more than 10% above those without.

Wastes are unwanted or unusable materials discarded after use because they are worthless. In cities, wastes are abundant first because of the population and second because there may not be sustainable means of managing their disposal. Wastes therefore may appear as municipal wastes from households, hazardous and radioactive wastes from nuclear plants and hi-tech industries; industrial wastes, waste water like sewage, biogas input and others. Wastes arise as a result of human consumption of goods and services. Housing as a good should be consumed in such a manner as to exhibit little or no injury on the environment. Sustainable housing does not only generate good quality housing but also protects the environment instead of destroying it. A dweller therefore is expected to relate generously with his environment in such a manner

as to maintain as much as possible natural ecological balance which according to Egunjobi and Alabi, (2007) is a state of dynamic equilibrium where stability is relatively maintained within the ecosystem. Getis, Getis and Fellman posit that humankind has always been faced with the problem of ridding itself of materials it no longer needs. Residential, commercial and industrial developments account for over 50% of wastes generated in cities. This underscores the huge amount of solid waste that would continue to be produced as long as people consume more and more of everything.

Housing is in dire need of an environment devoid of all wastes. What this presupposes is that efficient and effective means of waste management must be employed to maintain the standard required of residencies and offices. A number of systems and methods like Open dumping, Sanitary Landfills, Incineration, Composting, Recycling are in use in most countries. Though these have been utilized creditably in the management of waste, it is expected that integrated waste management will be a better way. This is a variety of options – such as source reduction, recycling and composting – where these are incorporated into an overall waste management plan. This is the preferred method such that the quality and value of housing can be enhanced appropriately.

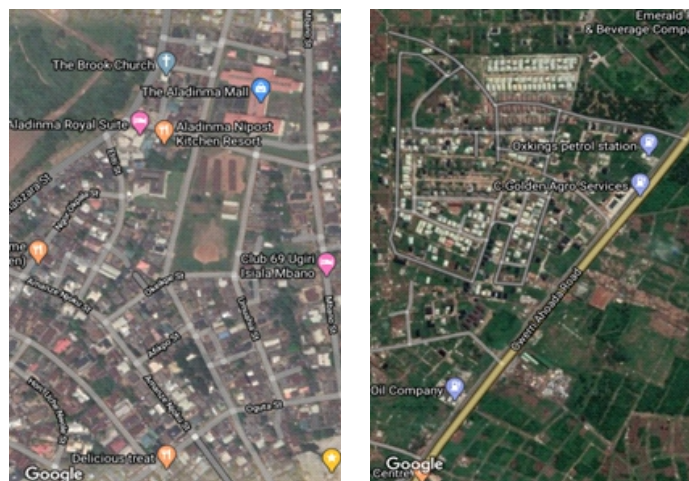
Entertainment and leisure is a necessary requirement in any housing development. All works without play as they say, makes Jack a dull boy. Every person requires a place and moment to cool off the pressures of everyday hassles. Such a provision must be integrated in the architecture of houses to align it to sustainable housing as provided by the UN-Habitat charter. Leisure and entertainment activities include walking, crafts, gardening, hobbies, exercise, sports, fish culture, jogging, football, skiing, and so on. These activities help to maintain lower body fat percentages, lower blood pressure and cholesterol as well as improve mental wellness while reducing stress. For housing estates and layouts, entertainment and leisure activities make room for social inclusion, personal developments and enhancement of quality of life.

Methodology

Three housing estates were sampled – Aladimma Housing Estate, Redemption Housing Estate and Graceland Estate. These estates whose aerial views are presented as figures 3 and 4 were chosen among others because of their unique locations in Owerri. Aladimma Housing Estate was the foremost estate established in 1976 at the birth of Imo State under the military government of General Olusegun Obasanjo as President and Commodore Ndubuisi Kanu as Governor. The estate housed the senior and middle level manpower of the State civil service such as permanent Secretaries, Directors and Heads of departments in the various civil service offices of the state. Apparently the estate as at the time of its emergence was the best and envy of all citizens of the State. It was well laid out and planned by the Imo State Ministry of Lands, Housing and Urban Planning. To guarantee that the estate received all necessary attention from government, it was specifically entrusted into the newly created Imo State Housing Corporation (ISHC) established to manage and superintend the management of the estates and any other estate that may be created by the corporation or entrusted into its care. Thus Aladimma Housing Estate became the cynosure of all eyes with well laid out tarred and paved roads, waste management, adequately reticulated pipe borne water, electricity from the National grid, amusement parks, schools, churches and hospitals.

Redemption Estate was created by Achike Udenwa who ruled as Governor of the State between 1999 and 2007. His mantra was “Redemption of the State” from which the estate took its name. The location of the estate at Obinze was a little bit away from the city because the governor in his quest to develop all nooks and crannies of the State capital took the bold initiative thereby encouraging beneficiaries who are almost civil servants to take abode there at. The houses comprised bungalows of all descriptions on site and serviced plots. Unfortunately, the roads were neither as paved nor tarred as at Aladimma Housing Estate nor did the estate have schools and hospitals facilitated by the government. Nonetheless, people took residencies to the extent that as at the time of this survey, property values are rising as depicted in Tables 2-7 because of many establishments nearby such as Federal, University of Technology, Nigeria Police Force headquarters and Nigeria Correction Service (formerly Nigeria Prisons Service)

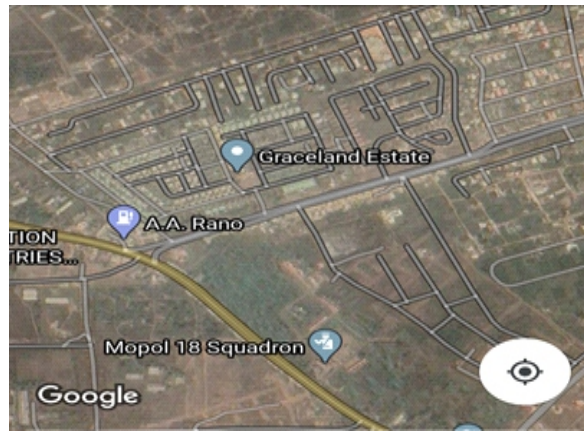
Fig. 2: Aerial views of Aladimma Housing Estate and Redemption Estate



Source: Google map satellite view 2020

Graceland Estate is an entirely different concept as it was an amalgam of efforts of Federal government through the Federal Housing Authority and privately owned Graceland property. The arrangement was such that the Federal Housing Authority acquired the land but entered into contract with the private developer for development and management. Indeed, the effort of the developer was so intimidating that the estates seem to occupy the first position in Imo State in terms of ecology. There are different categories of developments from detached bungalows to semi detached bungalows to detached duplexes and semi detached duplexes, all exquisitely arranged and planned methodically in a very aesthetic manner. There are churches, schools, central water scheme as well as private boreholes, paved and tarred roads, adequate waste disposal system and other facilities.

Fig. 3: Aerial view of Graceland Estate



Source: Google map satellite view 2020

Analysis of environment and facilities in the neighbourhoods considered electricity/power, Water, Communication/Roads (internal and external), Waste disposal and management, leisure as well as jobs/employment. These were accorded 100% each and graded.

Presentation and Analysis of Data

Table 1: Ecology/Infrastructure of the Estates

S/No	Estate	Power/ Electricity	Water	Comm./ Roads	Waste Disposal	Leisure	Jobs	Total	%
1	Aladimma	45	50	70	45	63	70	343	57.2
2	Redemption	47	50	50	37	50	51	285	47.5
3	Graceland	53	55	85	75	82	90	440	73.3

Source: Okoronkwo & Okoronkwo 2020

Table 1 shows the different categories of infrastructures and ecology of the estates as well as the rating of these facilities based on the survey conducted. Power/electricity showed a difference in the ratings. This was as a result of the frequency and regularity with which the public power system under the management of Enugu Electricity Distribution Company (EEDC) services the estates. Households provide their water in the estates through private boreholes except at Graceland estate with a central water scheme that sometimes services the estate. The quality of paved and unpaved roads in the estates accounted for the disparity in values recorded. Whereas Aladimma Housing Estate had very good and solid roads that had lasted over the years, they had been allowed to gradually decay notwithstanding the facelifts carried out by each successive government. The roads at Redemption Estate are terribly poor being unpaved and riddled with potholes. At Graceland Estate however, all roads are paved, tarred and in good condition of repairs. The reason may not be far from the management style or the age of the estate which is not as old as the others. Whereas Graceland estate practices Comprehensive Compact Management (CCM) Aladimma Housing Estate and Redemption Estate practice Universal Estate Management. All the estates are connected to

telecommunications channels and are accessible to the internet throughout the day. Of the three estates, Redemption estate was the worst in the provision of places of leisure and entertainment while Graceland estate had more than enough with state of the art event centres, shopping plaza and recreation grounds. Though Aladimma Housing Estate also had these facilities, the level of decay and abandonment of the facilities is horrifying. The ultramodern Aladimma Shopping Mall has long been abandoned owing to poor management while the sports field of Aladimma Estate Primary School is always flooded during the rains. The level of occupancy of these estates as a result of their proximity to places of work and vacancies for jobs was quite interesting. While many people flock to Graceland Estate notwithstanding that it is not at the centre of the old city, people are deserting Redemption Estate because of the level of infrastructure thereat. The level of occupancy witnessed at Aladimma Estate was attributable to its location. Non-the-less, it could not still compete with Graceland Estate in terms of occupancy.

It is clear that Graceland Estate seem to be better harmonized and managed (73.3%) by the provision and supply of the amenities when compared with the situation at Aladimma Housing Estate (57.2%) and Redemption Estate(47.5%) in that order. The impact and contribution of housing ecology on the value of properties in the estates were analysed by recourse to valuation assignments executed by Estate Surveyors and Valuers within three years 2017-2019. Fifteen valuation assignments were chosen. These were undertaken on the common types of buildings within the estates – detached bungalow; semi detached duplex and detached duplex. As much as possible, properties of comparable styles, accommodations, quality and layout plans were chosen. The values herein reported are value averages of the different categories of properties over the period of the survey (2017 -2019)

Table 2: Property Values 2017 – 2019 (Bungalow)

Property Type/year	2017 N(m)	2018 N(m)	2019 N(m)
Aladimma Housing Estate	15	15	17
Redemption Estate	8	9	10
Graceland Estate	18	22	25

Source: Okoronkwo and Okoronkwo (2020)

Table 3: Property Values 2017 – 2019 (Semi Detached Duplex)

Property Type/year	2017 N(m)	2018 N(m)	2019 N(m)
Aladimma Housing Estate	22	25	25
Redemption Estate	17	19	20
Graceland Estate	33	34	37

Source: Okoronkwo and Okoronkwo (2020)

Table 4: Property Values 2017 – 2019 (Detached Duplex)

Property Type/year	2017 N(m)	2018 N(m)	2019 N(m)
Aladimma Housing Estate	20	23	25
Redemption Estate	18	20	23
Graceland Estate	30	34	41

Source: Okoronkwo and Okoronkwo (2020)

The tables 2, 3 and 4 displayed the result of valuation assignments averages in the estates. These were undertaken independently by different Estate Surveyors & Valuers within the period of the investigation. All valuations were undertaken for the purposes of determining the capital values of the properties which formed the subject matter of the assignments.

Table 5: Increase in property values (Bungalow)

Property Type/year	2017 N(m)	2019 N(m)	% increase
Aladimma Housing Estate	15	17	13.33
Redemption Estate	8	10	25
Graceland Estate	18	25	38.89

Source: Okoronkwo & Okoronkwo (2020)

Table 6: Increase in property values (Semi detached duplex)

Property Type/year	2017 N(m)	2019 N(m)	% increase
Aladimma Housing Estate	22	25	13.63
Redemption Estate	17	20	17.65
Graceland Estate	33	37	12.12

Source: Okoronkwo & Okoronkwo (2020)

Table 7: Increase in property values (Detached Duplex)

Property Type/year	2017 N(m)	2019 N(m)	% increase
Aladimma Housing Estate	20	25	25
Redemption Estate	18	23	27.78
Graceland Estate	30	41	36.67

Source: Okoronkwo & Okoronkwo (2020)

Tables 5, 6 and 7 displayed the percentage variation of property values between the beginning and ending years of analysis (2017 and 2019). Table 5 showed that while property values of

bungalows in Aladimma increased by 13.33%, Redemption Estate attracted an increase of 25% while Graceland Estate attracted an increase of 38.89%. The most plausible reason for this was the age of the estates which reflected in the choice and market of bungalows. This was not the same when semi detached duplexes were analysed where Redemption estate had a greater increase in value (17.65%) when compared with Aladimma Housing Estate (13.63%) and Graceland Estate (12.12%). Semi detached duplex was in vogue at Redemption Estate because of the haphazard nature of developments that allowed bushes of uncompleted and buildings whose works are still in progress to doth the estate. Residents were keen on having very close neighbours than living in detached premises. Table 7 displayed data on percentage increase in property values of detached duplexes. While age of the estates played some role in the values recorded, the impact of housing ecology on property values was quite clear. Whereas Aladimma Housing Estate recorded 25% increase, Redemption Housing Estate recorded 27.78% while Graceland Estate recorded 36.67%.

Conclusion and Recommendations

This study examined the contribution of housing ecology to property value by studying the impact the constituents of housing ecology including but not limited to electricity/power, Water, Communication/Roads, Waste disposal and management, leisure as well as jobs/employment on three residential estates in Owerri Imo State. Our study concludes that housing ecology not only determines the management standard of an estate but also the harmony within the estate and invariably the increase in property values in accordance with the quality and availability of the facilities that make up housing ecology.

It is strongly recommended that estate developers and development agencies plan their activities to revolve around the provision of amenities that will benefit the residents instead of developing the structures without paying proper attention to other facilities that make life worth living within the estates. It is also instructive that policy developers understand their role in estate development and management. In this wise there should be synergy and collaboration between all stake holders in the built environment, urban design and town planning to afford developers the initiative to achieve their goals to actualize the UN-habitat initiative for sustainable development of our cities. In the end, the services of Estate Surveyors & Valuers must be secured for the proper management of estate of all categories. These are experts in land use analysis, planning and development as well as management for the actualization of the goals of real estate investment.

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