

GREENING THE LANDSCAPE FOR A SUSTAINABLE LANDED PROPERTY VALUE ENHANCEMENT

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Abstract: Up till now most researchers in building/property management and evaluation have written on how to improve and maintain property value either by renovations or through capital project developments like attachment of garages, construction of pavements, extension of front yards or backyards and so on. Not much attention has been focused in the direction of how to improve and enhance property values through the utilization of abundant natural resources available within the environment. This research provides a general overview of the various ways by which the application of the practice of landscaping for a typical residential property (and by extension, other landed property types) will add in pecuniary terms to the value of residential properties in particular. A relevant comparison of values of properties obtained through valuation of a case where landscaping was consciously embraced and another left bare of any purposeful landscaping at Enugu government reservation area (GRA) in Enugu state, Nigeria. The result of this exercise produced some considerable and convincing financial value enhancement in the case where landscaping is adopted as against one in which it is ignored. The research winded up with encouragement to green our landscapes to enjoy the various aspects of sustainable land value enhancements.

Keywords: Landscaping, Property Valuation, Green Building, Aesthetics.

1.0 INTRODUCTION

The importance of plants to man is related to their multifarious uses as sources of food and other animals (which of course form a part of the landscape), energy, fibre, drugs, structural materials and other products useful to man. Plants are of benefit to man and his environment. Formal landscape gardening began in the developed countries with the Italian Renaissance (Harvey 1988). Flowers, Vistas, sculptures, water were artfully juxtaposed to provide pleasing total designs of geometrical regularity. This style was taken up and improved upon by the Frenchman Andre Le Notre who planned the gardens for king Louis XIV at Versailles. The Dutch approach (formal approach) was replaced in the 18th century by the informal approach of William Kent and “Capability” Brown. Also in the United States the English style has usually predominated. Landscaping in the developed countries, however, though a comparatively new profession, has an old tradition, which is a characteristic of 18th century

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England. The tradition includes the works of the great renaissance artists of the 16th century Italian Villa gardens and the designers of the Palace garden of 17th Century France, Germany and Austria (Chambers 1988).

In the developing countries especially Africa, there is unfortunately no proper written documentation of the history of landscaping, Although Africa is a continent where equatorial and tropical rainforest abounds and provides the African man with all the resources of nature.

The history of landscaping in Nigeria can be traced back to the 18th century where the Benin, Ibo, Yoruba, Hausa and other tribesmen decorated their compounds by planting mainly trees of economic and religious importance for the protection of their gods and against evil spirits and to supplement resources gathered from the forest. Our fore fathers in one way or the other built small huts and planted them up with special trees at places where they normally had their moonlight plays, and this was a form of landscaping. Progressively, good strains of trees especially fruit bearing ones, were obtained from distant relations and established around homes in order to exploit the superior quality and yield of the required strains. Similarly trees and shrubs were obtained and established around homes to fulfill particular functions which may be of cultural, economic, social or religious significance among others. Most of the plants we have in our compounds today are obtained after a series of domestication. The contribution of these domesticated wild fruits, nuts and seeds to the African diet and their potentials in overcoming or ameliorating the food problem have been indicated for African countries especially Nigeria, by Getalun (1974) and Okafor (1980). The fruits and nuts which are obtained from indigenus fruit trees are good sources of relatively cheap plant protein and other essential nutrients such as minerals and vitamins (FAO 1982). These examples among others contribute significantly to the food basket of our people within their residential homes, especially during the famine season. Thus kernels of Dacryodes edulis (African pear) which contain 3.2% protein fruit pulp and bran of Treculia Africana (African beadfruit) which contains 9.4% and 5.7% protein respectively and residual kernel cake, of Irvingia gabonensis which is also rich in protein and cake of palm kernel Elacis guineensis can all be used in animal feed formulations. Specifically the following species have been found to be suitable for the production of fruit jam. Chrysophyllum albidum (African star apple), Irvingia gabonensis (African mango), Dialium guineensis (black velvet tamarind), Spondias mombin (Hog plum) (Okafor and Okolo 1974), (Okafor 1988).

Other benefits are in the adaptation of domestic landscaping for religious/cultural, medicinal, snake and witchcraft repellent, and thunder protection purposes. Bible plants have been used to maintain holiness and solitude, thus making the compound sacred, (Hopper 1981). Some of African plants have a high medicinal values and are used in different ways by different people for the cure of certain ailments; these include snake and witchcraft repellent.

The objective of this research is to investigate if values of residential houses can be enhanced and maintained through landscaping. Whatever kind of house one lives in, it requires some kind of environmental beautification and economic inputs in order to achieve both aesthetic and economic values including other latent values, which invariably increases the value to the occupier of such houses. This work will show in concrete terms the effects of landscaping of residential property values in the study area.

It is the ultimate hope through this work that the awareness particularly on landscaping can be aroused and sustained in people whose interests and intentions are not just to build house to let or live in, but also to have a pleasant appendage or accompaniment to the house by way of landscaping. Since invariably such a step is a promising way of improving and maintaining the value of the residential properties as well as the health and living conditions of those who use these properties.

2.0 MATERIALS AND METHODS

An empirical survey was carried out on different housing types in the Government Reserved Area (G.R.A) in Enugu, Enugu state of Nigeria. The houses surveyed were classified on normal basis of social stratification of Low density, Medium Density, and High Density occupation associated with High income, Medium Income and Low Income Social stratification characteristic of the demographic trends of most societies as also found subsisting in the study area. Houses surveyed were randomly chosen. The study was conducted by the use of Questionnaires, Personal Interviews, Visits and study of the external environment of the buildings.

A comparison of values of properties was obtained through valuation of a case where landscaping was adopted; and another left bare of any purposeful landscaping at Enugu government reservation area (GRA) in Enugu state, Nigeria. The cost of landscaping in relation to its effects on rental value was examined. This was found necessary, as it is another way of illustrating the need for landscaping in a compound.

3.0 RESULTS AND DISCUSSION

It was observed that some residents have in one way or the other attempted to improve their surroundings by planting economic trees and other shrubs, although one would say that in most cases, they are not well planted, but the level of awareness is quite encouraging especially in low density residential areas. The details of data collected is as presented Table 1:

Table I: showing causes for the nature of residential houses

No. of questionnaire administered in the residential areas			Response	Nature		Cause		
Low density	Medium density	High density		Land-scaped	Unland-scaped	Ignorance	Lack of adequate information	Finance
30	42	38	25 30 15	20 20 5	5 10 10	3 7 1	2 3 6	

3.1 LANDSCAPED COMPOUNDS

3.1.1 Low Density Residential Houses

Table 1 above shows that landscaping is a regular practice in this area. This shows that the level of awareness and appreciation of landscaping is something to reckon with. The occupants of the landscaped houses indicated that lack of finance and inadequate information about the availability of landscape architects are also one of the major causes for not landscaping their residence. For those who have actually landscaped their houses it was established that availability of land space and fair level of income as well as taste has led to a greater appreciation and adoption of landscaping by the occupants and owners in this area.

The overall impression of the residences visited during this survey is that landscaped houses look more appealing and organized while unplanted houses look very bare and poorly planned. A typical example is shown in Figure 1 and Figure 2.



Figure 1: Landscaped building in reserved area of Enugu



Figure 2: landscaped building in the same locality

3.1.2 Medium Density Residential House

In as much as there is limited landscape to design for residents in this area are found to appreciate landscaping as they have resorted to landscaping, although only at the frontage of their houses. However the level of awareness is found, to have depreciated at this level and even where awareness is recorded, lack of finance is found to be a very potent problem.

3.1.3 High Density Residential Houses

Residents in this area are handicapped by finance as they are mostly low income earners as established in the questionnaire analysis. They also have little or no space to develop. Majority of the residents are completely ignorant and indifferent about landscaping. However, some residents still landscaped their houses (mostly tenements) by dotting their compounds with mainly economic trees.

3.2 COST EFFECTS ON RENTAL VALUE

The findings from the investigation of cost of landscaping in relation to its effects on rental value are shown in Table 2:

Table 2: Showing the cost and effect of landscaping on rental value

No. of questionnaires administered in the residential areas			Response	Cost		Effects and improvement on rental value			
Low density	Medium density	High density		Cheaps	Fairly cheaps	Expensive	No effect	Minimal	Substantial
30	42	38	25	5	8	7	1	8	12
			330	6	10	4	2	3	16
			15		4	1		3	

Table 2 shows that the cost effect lies heavily on the people in high density residential areas while the reverse is experienced in medium and low density residential areas.

However, it was established that landscaped houses command higher rents than similar unplanted houses. This is an indirect benefit and a relationship between cost and effects on rental values have shown that the latter has improved substantially. A direct benefit could also arise or be obtained from landscaping. This is seen in the nature of direct sale of fruits from the garden or orchard and animal feed production, to mention but a few.

To further elucidate on the effect of landscaping on rental value, it was found that landscaping can increase the rental value by as much as 5% as shown in the valuation carried out on two similar residential buildings within the same locality.

3.3 YIELD REVENUE OBTAINED FROM COMMON TREES PLANTED AROUND RESIDENTIAL HOMES IN ENUGU

The result of the research carried out in residential homes in Enugu is summarized in Table 3.

Table 3: Yield and revenue for common domestic trees

Species	Common names	Yield/tree/yr	Net value in ₦
Citrus spp	Orange	80-250 fruits	2500

Cocus nucifera	Coconut	30-100 fruits	10,000
Gleais guineensis	Oil palm fruits	10-20 bunches	13,000
Kola spp	Oji, gworo	25-80 pods	9,600
Mangnifera indica	Mango	600-000 fruits	10,000
Persea Americana	Avocado pear	300-800 fruits	64,000
	Native pear, (Ube)	5,000-10000 fruits	5,000
Total			114,100

On the average a tree $\frac{114,100}{7} = 16,300$ p.a

From the field survey, it was found that most compounds visited, have an average of four of the tree species enumerated above, thus

Yield per 4 tree per annum ₦16,300 x 4

Total annual net income from 4 tree per compound trees N65,200.00

To further confirm the economic value of landscaping, a case study of two similar properties owned by one person was made. The properties are here in after referred to as property A and B respectively.

3.3.1 Property - A

The property under consideration situate at No. 1B Hill view, Independence lay-out Enugu, Independence layout is a low density residential, Urban area, It is fully developed and provided with the necessary infrastructure and amenities like mains electricity, water supply and good access roads. Development in the premises consist of the main building and domestic boys' quarters.

The main building is a one-story self-contained structures construction is of sandcrete block walls rendered and finished in quality make emulsion paints. Roofing is of long span aluminum sheets on still trusses, ceiling of suspended type. Flooring is of cement screed finished is terrazzo lining Doors are two number, tree leaves aluminum sliding doors to the main sitting room while others are of flush veneer; windows are equally of glassed aluminum sliding types. Spaces provided include living/dining, two number stores, a kitchen and one number car park. Others include wife's and master's bedrooms both fitted with long wardrobes and provided with separate baths and toilets, three children's bedrooms with common toilets and a balcony to the first floor.

The domestic boys quarter is a single floor self-contained structure. Construction is of sandcrete block walls, rendered in white emulsion paint internally and externally. Roofing is of asbestos sheets on timber-framed trusses, ceiling is of asbestos boards and flooring on Man's concrete with cement screed finishes. Doors are flush veneer and windows are glazed louvers on Crital carriers. Spaces provided are three number bedrooms, one number bath, toilet and a kitchen.

The premises is well and modestly landscaped with economic trees (Oranges, Mango, Guava, Star-apple, Sousop, Coconut and native pear), flowering shrubs and a grassed lawn to a competing taste. The premises is walled in sandcrete block walls to a height of about 1.4 metres finished in cement screed and painted are externally and internally. Two entrance provided are fitted with iron gates. The neighbourhood is well provided with mains electricity and water and as such, the premises is serviced. Ordinary visual inspection carried out on the property indicated that its structural repairs is sound and in good condition.

3.3.2 Property - B

Same as property A in terms of main building and boy's quarters accommodation, services, condition except that the outside is not landscaped.

3.3.3 Valuation of Properties A and B

The information got from the owner of the property indicated that the rent passing from property-A (which is landscaped) is ₦450,000 p.a. net (four hundred and fifty thousand naira) while the rent passing from property-B (which is not landscaped) is ₦400,000 p.a net (four hundred thousand naira). Valuation of properties was made as shown in Table 4 and Table 5.

Table 4: Valuation of Properties A and B

ITEM	AMOUNT ₦
<u>Valuation of Property A:</u>	
Rent passing	450,000
Y.P in property @ 6.5%	15.38
Capital Value	6,921,000
Say ₦92,000 (ninety-two thousand naira)	
<u>Valuation of Property B:</u>	
Rent passing	400,000
Y.P in property @ 6.5%	15.58
Capital Value	6,608,000
Say ₦85,000 (ninety-two thousand naira)	
Value of Property – A	6,921,000

Less Value of Property – B	6,608,000
Value attributable of landscaping	312,000

Conclusively, a capital value enhancement of ₦312,000 is obtainable on property A with appropriate landscaping as against property B that is not landscaped.

Table 5: Valuation of income form Tenants’ stand point

ITEM	AMOUNT ₦
<u>Valuation of income from Tenants’ stand point:</u>	
Average net income receivable from fruit trees (Total annual net income from 4 trees as indicated earlier).	65,200
YP Over the useful fruiting age of trees say 15 yrs @ 7.5% Sinking Fund (S.F) @ 2.5%	7.65
Value attributable to income from fruit trees	460,638
Add other intangible values say (30% of ₦460,638)	138,191.40
Value attributable to landscaping (Say ₦600,000.00 (Six hundred thousand Naira)	595,829.40

3.3.4 Summary of analysis

Property – A	₦450,000.00
Property – B	<u>₦400,000.00</u>
Difference	₦50,000.00

$$\text{Percentage increase} = \frac{50,000}{400,000} \times 100 = 12.5\%$$

∴ property – A has a percentage increase in capital value over property – B or approximately 12.5% which as earlier indicated is an element of enhancement in value of property – A due to landscaping.

Other intangible values include attribute to erosion control, soil and atmospheric amelioration, insecticide, aesthetic consideration etc.

3.4 SUMMARY OF FINDINGS

Based on the field survey and questionnaires analysis it has been established that:

a There are a few practicing landscape architects in low and medium sections of the study area, This is indicating that people can engage their services, There is every likelihood that due to their small number, they may be enjoying some monopolistic advantages.

b. Although there is still much to do about making people aware of the potentials of landscaping, there is a considerable improvement on the level of awareness on landscaping activity especially among the elites and high-to-middle income groups. However, the low income group are still very indifferent about this activity.

c. Landscaped houses and its residents have actually benefited through the improved and enhanced value boost on their residence by landscaping. These values are in the nature of good environment, erosion control, soil amelioration, food and animal feed supply, including other intangible values.

d. Most landscaped houses have increased rentals when compared to other properties within the same locality. The increased rentals have been found to be, attributable to landscaping.

3.5 RECOMMENDATION

To redress the problem identified during the study and to enhance the realization of the full potential of landscaping in the content of the study, the following are hereby recommended:

a. Adequate attention should be given to landscaping in the development of residential houses as an integral part of property development in such a way that at least 10 – 15 percent of the total development cost is expanded on landscaping aspect.

b. There is a need to identify and utilize local indigenous aspects as a strategy of in-situ conservation of such species, the majority of which are currently threatened with extinction due to already high rate of deforestation in the rainforest ecosystem.

c. Pure landscaping programme and techniques should be introduced as a course for students in the Environmentals and practicing professionals. This will be an advantage especially to those who will be involved in property development and management.

d. At the moment while it may not be lucrative enough to attract people to study a full course in landscaping, the establishment of practitioners (Botanicals, horticulturists, agriculturists etc.) can work alongside architects and town planners to achieve better results and still maintain a sufficiently lucrative practices that can be keep the professionals in business is suggested.

e. Priority attention which should be backed by law compelling all landlords and property developers to present their landscape design or plans before planning permission could be obtained, should be adopted by land development approver authorities.

f. Enlightenment campaigns on the benefit of proper landscaping, and the overall roles of clients in the environment should be given adequate attention by government and professionals in the construction industry.

g. Priority attention should be given by government in the allocation of funds and infrastructure to facilitate landscaping programmes.

h. The landscape architects should have a registered and recognized body so that their activities and fees in relation to house-type and total cost of work done will be streamlined and stipulated respectively

4.0 CONCLUSION

From all indications and observations made in this study, it is the utmost belief of the researchers, that if given adequate attention, landscaping will help in achieving a better environment, general public health and sanitation which will in turn enhance and sustain residential property values. In addition to these invaluable gains, the potentials of landscaping is so immense as established in the research findings that it can be adequately rewarding to every individual who partake in this activities of greening the environment. The potentials of landscaping should be exploited to its utmost in all situations of land development.

REFERENCES

- [1] Harver World Encyclopedia vol. 13 page 2479
- [2] Chambers Encyclopedia vol. 8 p. 342.
- [3] Getalum A. (1974). The Role of wild plants in the native diet in Ethiopia. *Agro Ecosystems* 1: p. 45-46.
- [4] Okafor J.C. (1980). Trees for food and fodder in the savannah area of Nigeria.
- [5] Food and Agriculture Organization (1982). Food Nutrition and Agriculture guidelines for Training Curricula. Paper no. 22 p. 205.
- [6] Okafor J.C. and Okolo H.C. (1974). Potentials of some indigenous fruit trees of Nigeria. 5th Annual Conference , Forestry Association of Nigeria, Jos.
- [7] Okafor J.C. (1988). Diversifying utilities of African Breadfruit (*Treculia Africana*) as food and feed.
- [8] Hopper F.N. (1981) Bible Plants at Kew.