Identification of the Cost Components of Architectural Landscaping in Residential Accommodations in the Enugu, Nigeria's Urban Areas

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Abstract

As the world particularly, the Western world develops; the developing countries are catching up with their growth pattern especially, in sustainable housing provisions. Unfortunately, this growth in housing provisions are creating stress and abandonment in the Enugu urban areas old housing stocks as newly architectural landscaping neighborhood are attracting the youth and affluent. This study aimed to identify the cost components of architectural landscaping in residential areas, that warrant the movement and abandonment of the old Enugu urban housing settlements into the new and more landscaped housing settlements. This study adopted quantitative and qualitative research methods that investigated the behavior of the Enugu urban area residents in dealing with their housing demands and interests. The quantitative and qualitative dynamic capacity of the central areas raises the expectation for their feasibility if the provision of services to the population is at a rate that assures the necessary facilities will be present at all times. Past housing programmes were not successfully implemented for many reasons. But fundamental among them was the fact that they were not tailored to a target population's income level and the household's ability to pay. The programmes were based more on 'needs' translated into arbitrary (and unaffordable) standards rather than on "affordability" and willingness to pay. It recommends that the players in the building industry be made aware of the relevance of the architectural landscape in creating sustainable development for users in residential neighborhoods.

Keywords: Shelter, Development, Landscaping, Architecture, Sustainability, Urban Planning

Introduction

It is imperative and clear that understanding a community's vision, values and culture are the key components to understanding the type and amount of development that is appropriate for the community. Exclusive and ostentatious living was not common in Nigeria and was more European however, with the arrival of the Western culture in Nigeria, came the Western style of living especially, known and referred to as the Government Reserved Areas (GRA).

Government Reserved Area (GRA) can be interpreted to be a euphemism for affluence and a better standard of living. These exclusive residential areas were originally created to cater to white colonial administrators. However, after the independence, Nigerians began to occupy administrative senior posts that hitherto used to be exclusively preserved for the white overlords, including their highbrow and secluded GRA residence. GRAs are usually well-serviced areas with a good road network, and serviced estates, properly maintained that sometimes have the state's government houses and undoubtedly used by politicians, celebrities, and other influential people in the country. Lagos has a couple of GRAs on the mainland; Ikeja GRA, Ogudu GRA (Emordi, 2022). Enugu and Onitsha have their GRAs respectively. Abuja, although not designated GRA, has Mitama, Asokoro, and other exclusive areas that have a status similar to that of the GRAs and comparable with other cities GRAs. Of unique significance and importance in all the cities' GRAs, are their quality of landscaping and attractiveness which are generally, not common in the conventional public housing and settlement areas within the Enugu urban. However, the conventional housing schemes and settlements in Enugu urban areas are changing, and the attitude of the people changing with time and space. The housing market in Enugu Urban is changing with time and the values and attributes of a well surveyed and landscaped Enugu housing schemes are attracting the rich and privileged into ostentatious and subjective living in high-cost housing schemes only affordable by the privileged few (Okonkwo, 2013). Building developers cashing in on the current trend of creating exclusive housing schemes for the privileged ones in the Enugu urban area have realized that, there are important roles in creating a unique sense of identity and purpose in postmodern buildings they are erecting, and with substantial landscaping, architectural features and symbols. Architectural features and symbols generally help in creating a good sense of identity and purpose for the buildings used. This creates a sense of place with emotional attachments for the dwellers (Dripps, 2013).

Architectural features and symbols are important components of architectural design that contribute to the overall aesthetic, functional, and cultural significance of buildings and structures. However, the use and interpretation of these elements can be highly subjective and context-dependent, leading to debates and controversies in the field of architecture. The features refer to the physical characteristics of a building or structure, including its size, shape, materials, and details. According to Ching (2011), architectural features can be organized into three categories: form, space, and order. Form refers to the overall shape and massing of a building, while space refers to the interior and exterior spaces created by the building. Order refers to the design principles and systems that govern the placement and arrangement of architectural elements, such as columns, arches, and pediments. Architectural elements and symbols help buildings stand out from their surroundings, create visual interest, break up the monotony of the urban landscape and create excitement and energy (Darling, 2017). In most cases, the features and symbols help in communicating the purpose of the building and the interest of the targeted market (Goltzman, 2011).

Symbols, on the other hand, are visual images or symbols that represent ideas. Using and recognizing symbols enriches our lives. Symbolism as a visual language is widely used in art. The symbols included in the latest modern art do not always mean anything to the viewer, but

they have a deep resonance for the artist. While much of the symbolism associated with mythology, religion, folklore, art, and culture have remained unchanged for thousands of years, a new form of symbolism has evolved. Designers around the world today, use symbolism in their designs to make them more meaningful and recognizable (Hirst, 2000).

Throughout history, the aspirations of all cultures and societies have been reflected through architecture. From the ancient Greek and Roman buildings that symbolized imperial power, to the celestial symbols embodied in the vaulted arches and towers of majestic Gothic cathedrals and mosques, architects shaped their work to create a universal visual language. Simple buildings may seem relatively purely functional, but they are also associated with deep beliefs (Milward, 1987). The public face of the building offers another aspect of its symbolism. It represents how a person wants to appear in the world. An open facade with many windows suggests openness and honesty, while a windowless facade with an enclosed courtyard suggests privacy. Luxury flowers represent status and power (Rodrik, 2003).

In today's developing world economy, a new type of symbol is forming. This is a unique expression around the world. This icon has a unique architectural term that reveals the different meanings and interpretations of people in modern society. The icon opens a new debate about its relevance and contribution to society and culture in the global arena of international cities (Jenks, 2007). Buildings of different shapes represent different symbolic ideals. Tall buildings can represent status and achievement, while environmentally conscious buildings demonstrate a connection to both nature and natural forms. People held strongly to the beliefs and meanings of the symbols and they were not just expressions to form a common belief system. It brought communities and cultures together. These symbols were the unspoken language of society and a common visual language in which they communicate. However, in the ever-changing modern society, this commonality and unity is under threat. Certain forms used in the design of a building's floor plans, elevations, and decorations attached to it make sense to us immediately by association (Hall, 2006). Therefore, it is important to create cities with structures and processes that inspire discussions about meaning, identity, and relationships with nature (Zukin, 2004). Most times, adequate and unsustainable landscaping are the key elements in beautifying the housing schemes.

Landscape, according to Neufeldt and Guralnik (1993), is an expanse of natural scenery seen by the eye in one view, to change the natural features of a plot of ground, so as to make it more attractive as by adding lawns, trees, bushes, etc. and in most cases, done by landscape architects and architects. Landscape architecture, is the art or profession of planning or changing the natural scenery of a place for a desired purpose or effect (Neufeldt and Guralnik, 1993). Landscaping, to make a garden, park, or other areas of land more attractive by adding different features, plants, etc. Sensitive design and good landscaping are particularly important if new buildings are to be fitted successively into small vacant sites in established residential areas (Hansard, 2023). With the introduction of good landscaping, comes the attraction into exclusive, well maintained and managed housing schemes all over the world. The pattern of living changed, real estate equally changed for good and affordability depends on ones capacity to afford good

living.

Though the real estate market is booming and home prices are already at record highs, it cannot hurt to maximize the value of one's property. One way to add value to one's home is by investing in a well-chosen landscaping project, the power of landscaping to increase ones home value cannot be overlooked (de Jong, 2023). According to Werner (2023), curb appeal, in the form of attractive landscaping, goes a long way in adding values to a home, depending on where the property is located. According to de Jong (2023), the ten (10) landscaping projects that worth investing to improve the value of one's home are:

- 1. Tree planting. Planting trees is the one landscaping project nearly every expert recommends for increasing a home's value.
- 2. Spruce up the front walkway. If the walkway is well-decorated, it instantly creates a good ambiance for the house. Planting flowers by the two sides of the walkway, and keeping the walkways illuminated will create a dramatic beauty.
- 3. Invest in a well-maintained lawn. Another major element of curb appeal, one should never underestimate is the power of a well-cared-for-lawn or front yard. A well-maintained front yard has a huge impact on the overall desirability of the home. The general rule for landscaping is that the home should look at least, as nice as the neighbouring homes.
- 4. Install landscape lighting. Attractive landscaping lighting not only enhances security around the home, it increases the property's value. A well-lit yard automatically improves the overall look of the house, hence adding to its value.
- 5. Construct a fire pit. Fire pits continue to be a major outdoor landscape attraction that increases property value. A fire pit is an arguably universally beloved home feature, perfect for families, young couples, and anyone who loves to host and entertain guests.
- 6. Create privacy. Offering a sense of privacy is generally an important value for homes. Thoughtfully designed landscaping is one way to achieve this desirable goal. Houses that have big windows are among the most-liked because the windows keep the interior well-lit. But bigger windows mean people can look into the house from outside. If the house has big windows, planting shrubs or hedges will complement the house and at the same time provide privacy (Krumhardt, 2023).
- 7. Add a water feature. Introducing a backyard pond or other type of water features can help increase the value of a home. When adding a pond or other water features, make sure you put thought into where it is located on the property, its size, and how it is decorated. It should incorporate accent lighting on each end of the pond to help increase its aesthetic appeal (Lutz, 2023).
- 8. Install an irrigation system. Most people love the look of landscaping, but few want to spend the time doing the required watering and that is where an irrigation system comes in, which can be a major value-add to the home. Install an automatic irrigation system that will water the plants when needed and there is no guesswork on how much water is necessary for the lawn (Jones, 2023).
- 9. Spread fresh mulch. Perhaps one of the easiest landscape projects one can embark upon is putting manure, fresh mulch on the landscaping area. This can help give a dull yard new, eye-

popping appeal, while also making the landscaping more economical (McMillan, 2023).

10. Convert to eco-friendly landscaping. Drought-tolerant landscaping plants are mare desirable and depending on the areas. These types of landscape materials often eliminate the need for irrigation, a definite attraction in certain areas and require far less daily maintenance. With all these values, the architecture of the area will be more attractive and inviting to those who can afford living in the area. Good landscaping changes the architecture of an area and architecture changes from time to time dating back in history.

These attributes are not easily seen in the conventional public housing and settlement areas in Nigeria and Enugu urban area is not exempted. Rather, the urban players (government, architects, planners, engineers, estate developers, etc.), quickly build the homes, rent them and move on without considering the landscape and maintenance part of the built environment and the cost implications. They equally do not consider the desired values, attributes and the comfort of the residents of the areas, making it easy for the few and privileged in the communities to seek and live in the expensive homes, in highbrow areas only affordable to the privileged ones. Cost and affordability, the primary capture index required to live in expensive areas of the Nigerian communities with unique architecture and well maintained landscape.

While reviewing the roles landscape architects and architects play in the building industry, Uji (2010) asserted that architecture is the means through which man intervenes in the natural environment and reshapes or refashions the physical environment for the purpose of sheltering himself from the elements, while he carries out activities that help him meet the biological, social, cultural, physical and spiritual needs. This function encompasses the organization of spaces and the enclosure, definitions or delineation of such spaces with physical features or structural components, in accordance with rules, norms, values or socio-cultural and economic characteristics of the people. In this vein and according to Teacher (2014), the earliest surviving written work in the early 1st Century on the subject of Architecture - De architectura, by a Roman architect, Virtruvius, indicated that a good building should satisfy three basic attributes:

- Durability it should stand up robustly and remain in good condition.
- Utility it should be useful and function well for the people using it
- Beauty it should delight people and raise their spirits.

These attributes listed by Vitruvius have remained till date. Also in that era, Teacher (2014) pointed out that, Leone Battista Alberti who supported Vitruvius, went further in his essay - De Re Aedificatoria, to declare that beauty is a matter of proportion supported by ornaments. Following Alberti's idea that beauty comes from properly proportioning buildings and that, "the rules of proportion were those that governed the idealized human figure- the Golden mean," this important aspect of beauty or aesthetics should be integrated into an architectural design process and not superficially added to improve its products.

The debate on what architecture is and what constitutes good architecture continued into the 19th Century when, according to Teacher (2014), an English art critic, John Ruskin (1849), averred in

his Seven Lamps of Architecture, that "Architecture was the art which so disposes and adorns the edifices raised by men ... that the sight of them contributes to his mental health, power, and pleasure." He believed that the aesthetics of a building is mostly important because it creates the first impression that is healthy to the viewer, and "a building is not truly a work of architecture unless it is in some way adorned." In his view, a building could be well-constructed, proportions well resolved, materials properly used, and the building very functional, but if it is not admired and pleasant to users, it is not good architecture. Again, in the 20th Century, Le Corbusier made a sharp and simple clarification between "ideals of architecture and mere construction" when he indicated that:

"you employ stone, wood, and concrete, and with these materials, you build houses and palaces: that is construction, ingenuity is at work. But suddenly you touch my heart, you do me good. I am happy and I say: This is beautiful. That is Architecture" (Teacher, 2014).

Contemporary architecture in Nigeria is lacking in some ways, of the architectural attributes of durability, utility and beauty, as, it is becoming increasingly difficult to have a healthy environment that could be said to be beautiful. Architecture is not just for Architects; it is for people, and whatever creative instincts and theories architects may have, it is through the senses that architecture can be felt (Allegretti, 2011).

Given that architecture is for the people as Allegretti (2011), indicated, the housing developers in the Enugu urban are cashing in on the modern trend by taking advantage of good landscaping and appropriate security measures in creating attractive housing quarters.

Statement of Problem

The challenges faced by the Enugu urban areas due to the increasing population, which is putting pressure on resources and making it difficult for communities to sustain themselves with necessities like housing and food. The people in these areas rely on natural endowments to meet their needs, with shelter being the most significant aspect of the built environment. Despite the population growth since Nigerian independence, there has been a shift towards newer, well-surveyed, and landscaped neighborhoods, attracting the youth and wealthy individuals, while older apartment buildings are left abandoned and in disrepair. This trend indicates a changing landscape in Enugu urban areas, with implications for housing and infrastructure development. Most developers focus more on having more enclosed space for renting based on a mercantile mentality even when their choice tends to work against return on investment. The cost components of architectural landscaping in residential areas are essential to determine sustainable development, improved living conditions, and well-informed investment decisions.

Aim of the Study

This study aimed to identify the cost components of architectural landscaping in residential areas, that warrant the movement and abandonment of the old Enugu urban housing settlements into the new and more landscaped housing settlements.

Research Methodology

This study adopted both quantitative and qualitative research methods that investigated the

behavior of the Enugu urban area residents in dealing with their housing demand and interests. Equally, it investigated how other researchers have looked at the issues especially, dealing with the architectural landscaping and the communities housing demand and supply. Taro Yamane formula was used to determine the sample size of 399. To carry out this research, 399 copies of the questionnaires were given to the participants. 86% response rate was indicated by the 350 copies that were returned.

Findings

The research documented the landscaping conditions of the old housing developments in Enugu, the earliest form of organized housing development in Enugu Urban (plates 1) which during that period were mainly used as shelter or makeshift structures and no consideration of space planning with landscaping features.



Plate 1. Physical condition of a typical urban poor informal/squatter settlement in Ugwu Aaron in Enugu

Source: Authors fieldwork (June 23, 2023)

As this developed, other layouts such as the New Haven Layout, Achara Layout, Ogui New Layout, Independence Layout, and so on were created. In most of these layouts, multi-story buildings were erected to accommodate more housing users per square area, as land became increasingly scarce due to urbanization and more households needed to be accommodated, some developers and landowners concentrated on building up the whole areas without leaving some portion of the land for landscaping and other activities to be done on the plot or their neighborhoods.

Some of these areas have grown into slums, creating health hazards due to overcrowding of habitable rooms and overuse of available infrastructure, declining quality of life, and the underutilized as well as untapped wealth of human resources (plate 2).



Plate 2. Violated setback in front of the yard at Ologo Road, Achara Layout Enugu. Source: Authors fieldwork (June 23, 2023)

Additionally, it was noticed that most three- to four-story apartment buildings do not have adequate space for parking cars as well as space to incorporate greenery within the compound. Most of the residents find it hard to even park their cars in the compound due to the limited spaces provided. When asked, a lot of the housing consumers who live in blocks of flats expressed their concerns about difficulty in driving out as well as no form of cooling ambiance with trees during hot climates. Some residents wished that most developers should abide by the minimum setback so that futuristic planning of the neighborhoods will give it a good aesthetic and economical value as well as security houses for each compound for building occupation. The housing authorities prescribed full setbacks, which were not maintained by the majority of dwellings, particularly the multistory buildings. This also made it harder to provide the necessary ventilation and solitude (plate 3 and 4).



Plate 3. Building structure encroaching to the road at Ekowa Street, Achara Layout Enugu. Source: Authors fieldwork (June 23, 2023).



Plate 4. Block of flats with no space planning within the compounds at Umuaniachi Street, Uwani, Enugu.

Source: Authors fieldwork (June 23, 2023)

Based on the researcher's interview, a significant number of residents reside in these urban poor settlements due to low house rent compared to the cost of getting more decent accommodation in the newer housing development areas. However, some of them admitted that they would prefer to move to a better location where they will enjoy some basic facilities like piped water and more

constant electricity, a good landscaping scene environment, a cool and quiet ambiance as well as maximum security within the neighborhoods.

When comparing the study area's architectural styles to those of other previous housing developments, the newer structures in the new housing layouts are likely to have undergone slight modifications., like the New Generation Layout, Independence Layout, New Haven, and Trans-Ekulu, G.R.A, where most residential developments have imbibed the use of walkways, street light, shrubs and flowers to beautiful the environments, security personnel at the entrance of the neighborhoods, etc. which leads to greater satisfaction among the users. The majority of developers are moving in that manner with their more recent developments since landowners and developers seem to be focusing more attention on landscaping features, which are thought to be key factors in influencing the demand for such accommodations (plate 5 and 6).



Plate 5. Residential layout with landscaping elements at Fidelity Estate, G.RA Enugu. Source: Authors fieldwork (June 23, 2023)



Plate 6. Security check at the entrance of the Residential neighbourhood gate Source: Authors fieldwork (June 23, 2023)

The researcher's study (table 1), shows that the respondents agree that the type of plants chosen for architectural landscaping plays a crucial role in shaping the overall design, aesthetics, functionality, and sustainability of the neigbourhood. Housing area with a well-defined arrangement and selection of street planting where the row of plant create a vertical plane to the visual character. Therefore, it gives an enclosure view for people. This is indicated by a mean response value of 4.88 which is greater than the criterion means of 3 and a low standard deviation of 0.32 indicating low variability of responses. Apart from that, most types of plant have aesthetical values in term of shapes, colors and characters itself. Basically, the use of proper type of plant is also needed in order to create a safe environment. The respondents agree to the following: Other lithic materials (3.89), Qualities and aesthetic designs (4.85), Lighting (4.80) and Other outdoor infrastructures (4.13). These components influence the cost value of the housing area (p<0.001) which was found to be significant at less than 0.01.

Table 1: Architectural Landscaping Components in Residential Neighbourhoods in Enugu Urban

S/n		Strongly disagree n (%)	Disagree n (%)	Indiffere nt n (%)	Agree n (%)	Strongly Agree n (%)	Mean ± SD
1	Type of plants	0 (0.0)	0 (0.0)	0 (0.0)	41 (11.7)	309 (88.3)	4.88 ± 0.32
2	Other lithic materials	8 (2.3)	14 (4.0)	57 (16.3)	202 (57.7)	69 (19.7)	3.89 ± 0.85
3	Qualities and aesthetic designs	0 (0.0)	0 (0.0)	7 (2.0)	38 (10.9)	305 (87.1)	4.85 ± 0.41
4	Lighting	0 (0.0)	0 (0.0)	7 (2.0)	56 (16.0)	287 (82.0)	4.80 ± 0.45
5	Other outdoor infrastructures	0 (0.0)	8 (2.3)	32 (9.1)	217 (62.0)	93 (26.6)	4.13 ± 0.66

In Enugu urban area, the quantitative and qualitative dynamic capacity of the central areas raises the expectation for their feasibility if provision of services to the population is at a rate which assures the necessary facilities will be present at all times. The central area capacity, can accommodate growth by infill, upgrading, densification, rebuilding, and in some other points as in the slums, redevelopment; but development resources allocation must be determined by certain amount of flexibility responsive to social and economic conditions prevailing at subsequent points in time. The structure of future growth in Enugu will be underlined by the potentiation and improvement of the established relationships or linkages between urban activity sectors which have shaped the need for expansion and development attention towards the city centre (Okonkwo, 2013).

The present day urban structure of Enugu dates back into the years between 1949 and 1959. Although the early 1950's were important growing years, it was in those ten years period that Enugu assumed what we could today term its main urban structure. What once had been a string

of loosely-connected housing sites or settlements, solely dependent upon the mining of coal for its existence, had diversified into an administrative centre with increasing industrial muscle. The population had more than doubled since 1953 and the city expansion continued with the development of Independence, Achara, New Haven and Ogui New Layouts. In addition, many new and impressive buildings dotted the city. According to the World Population Review (2023), Enugu's population has progressively increased since after the Nigerian Biafra civil war. In 2021, the Enugu urban population was 795, 271. In 2022, it was estimated at 819, 791. In 2023, it is 846, 560 and estimated to be 875, 552 in 2024. With the increase in the area's population, came the need for more housing. However, the area is still dependent of the old housing delivery except for the newly developed housing estates with well landscaped gardens and well secured, only affordable by the privileged few (2013).

From the researcher's study, the most relevant architectural landscaping elements in Enugu urban housing developments are trees and plants, lawn and turf areas, and landscape lighting. Others few landscaping elements were flowerbeds and garden with a walkway and pathway within their neighborhood as shown in figure 1.

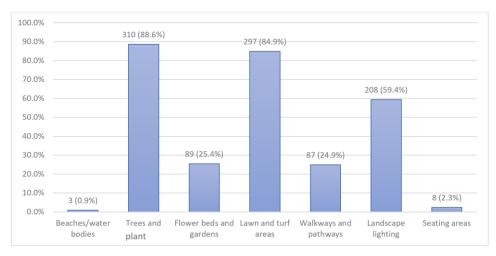


Fig 1: Landscape elements in residential Neigbourhood in Enugu Urban

Conclusion

Through the years, landscape planning has not been given adequate consideration and thoughts in design proposals and construction in the Enugu urban housing developments. As a result, the natural aspects of the environment are not properly utilized to preserve ecological balance in constructed settings, even though appropriate landscaping increases the livability, health, flexibility, energy efficiency, and environmental performance for owners and users.

The understanding of landscaping design for residential developments is important in creating a sustainable development for the residents in the area. The basic needs of residential properties such as trees and shrubs, open spaces, or recreation areas can become benchmarks for creating a sustainable residential environment in the future. It is proven that proper landscape planning and design with sustainable concepts and approaches help to create a conducive and responsive

environment for residential properties. People now look towards a better environment as a package for their better living environment. It is stated in the Guidelines for Housing Design and Landscaping (2006), that the overall value of residential properties needs to be enhanced with skillful landscape design and standard garden maintenance. Therefore, the importance of the architectural landscape in creating sustainable development has now become an issue that should be made aware to all people and organizations. Moreover, the elements and characters of the landscape need to be enhanced in most residential developments to support the needs of the neighborhoods.

The major challenge in housing delivery in the city of Enugu is on how to arrive at a satisfactory balance between residential quality and the ability of households to afford that quality. The present trend, in demands for housing, which includes a strong demand for commercial and industrial spaces in hitherto pure residential central areas, is expected to continue to be pressing. Past housing programmes were not successfully implemented for many reasons. But fundamental among them was the fact that they were not tailored to a target population's income level and the household's ability to pay. The programmes were based more on 'needs' translated into arbitrary (and unaffordable) standards rather than on "affordability" and willingness to pay.

The government provisions on mortgage interest rate and loan ceiling to individual are issues which affect directly the capability of the private sector to provide houses, and that of households to build or own houses. The primary components of residential construction costs are land, infrastructure, shelter, and construction management. Even with interest-free mortgage financing, and with 25 percent of household income devoted to housing, 90 percent of the civil-servants can never afford to build or buy a housing unit as it is currently being constructed (Okonkwo, 2012).

Recommendations

This research recommends for the players in the building industry, the professionals, architects, landscape architects, engineers, government, non-governmental organizations, and private developers to be made aware of the relevance of the architectural landscape in creating sustainable development for users in the residential neighborhoods. The residents of the communities should be engaged in the design process through surveys, community meetings, or workshops and their contributions, incorporated in the landscape designs to create a sense of ownership, belonging and inclusiveness. The local authorities should undertake measures to forge smart partnerships with private sectors and developers to maintain and strictly adhere to setback requirements, maximum building heights, and permissible land uses atleast 30% of the development area to the egreen areas. The urban planners and developers should consider the environment and spaces they design and build with regards to the needs and comfort of users.

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