

# Reshaping the Morphological Elements of Changing Urban Spaces: A Study of Mushin, Lagos-Nigeria

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**Abstract**— Highly urbanized environments have survived countless urbanization conflicts, upheavals, and disasters. Human beings are survivors and have survived on earth, the earth has also survived us. There is more to the ecosystem that can thrive in conjunction with our habitats and landscapes. Mushin community is a thriving mixed-use community with both residential and commercial activities at its peak but it has been entrenched by urban sprawl and urbanization over the years. Commercial activities have overtaken the originally built private residences which have been converted to other uses. The schools, worship centers, and public buildings do not consider the psychological, comforts, and livability of their users, less attention is given to the ultimate wellbeing of the people and the depleting urban spaces. This study is bolstered by the philosophy known as *Greenology*. It is the art and science of greening using Urban Greening Solutions (UGS) for planning and designing, pushing the boundaries of greening for urban architecture and ecology. Streets are public spaces and the design of the streetscapes for all users is one of the determining factors in the success of a balanced ecosystem and providing comfortable and sheltered conditions required for balancing the needs of pedestrians, public transit, bicyclists, and vehicles. A survey of five hundred (500) questionnaires was distributed to respondents, which consisted of the residents, office owners, and traders. Four hundred and twenty-two (422) were retrieved correctly filled and used for analysis. An updated land use data were also obtained using the Geographical Information System mapping. The paper summarizes the sustainable and adaptive strategies for Urban Green Infrastructures (UGI), addresses the challenges that Mushin confronts, such as preserving historic characteristics, revitalizing the core streets, and developing conceptual frameworks and policies towards incorporating adequate green infrastructure in the urban planning and developments of the metropolis.

**Index Terms**— Ecosystem, Streetscapes, Metropolis, Urban Greening Solutions, Urban sprawl, Urban Planning, Wellbeing.

## 1 INTRODUCTION

Thriving landscape means the ability to withstand life and natural support systems and functions under the sudden and usual stress of sudden disaster or sometimes slow human activities which causes the effects of climate change (Wiersema, 2015). Human thrive depends on adapting to the primary settlements in life-sustaining ways. Spirn (1998) opined that human survival depends upon adapting ourselves and our settlements in life-sustaining ways, designing places that reflect the interconnections of air, earth, water, life and culture, that help us feel and understand these connections, places that are functional, sustainable, meaningful, and artful. The pivot of this paper revolves around reshaping the psycho-emotional wellbeing and the depleting urban spaces. Lagos urban has grown and evolved through time, keeping pace with the changing trends of urban cities. Thrive is a world synonymously used in the context of study to mean resilience. The process of evolution has however never been uniform as to be simply characterized and the shifting preferences and value-concept predominating from time to time. Morphology analysis of the urban settlement of Mushin would testify this through various contrasting features in regards to physical form, pattern, and structure that come with time. In the present context of resilience and development, there is an accelerating trend of urbanization resulting from a surging influx of

people from rural areas to urban centers thereby struggling with the basic facilities and amenities that can hardly be sufficient or never adequate to meet the total population of Lagosian.

There is a need to address the environmental challenges of the future through the role of green infrastructure. More resilient and more capable of meeting social, environmental, and economic objectives than 'grey' infrastructure. Green infrastructure is an integrated approach to land use (UK Landscape Institute, 2013). In ecology, a habitat is the type of natural environment in which a particular species of organism lives. It is characterized by both physical and biological features. A species' habitat is those places where it can find food, shelter, protection, and mates for reproduction (Wikipedia, 2018). The physical factors are for example soil, moisture, range of temperature, and light intensity as well as biotic factors such as the availability of green and the presence or absence of predators like the human adverse effects. Every human being has certain habitat needs for the conditions in which it will thrive most especially within an urban space.

A general law on the protection of habitats may be more difficult to implement than a site-specific requirement. A con-

cept introduced in the United States in 1973 involves protecting the critical habitat of endangered species, and a similar concept has been incorporated into some Australian legislation (Lynch, 1990). This study is aimed at articulating Urban Green infrastructures (UGI) towards reshaping the psycho-emotional wellbeing and the depleting urban spaces and to creating an Urban Green Infrastructure Master Plan for the Lagos urbanized and mixed-use settlements. In many African nations, the general attitude in green space planning is, often articulated exclusively through spontaneous action and direct intervention to a visible problem, no long-term plan; it was only criticised on the short-term effects that are set against limited time frames. As a result, this has contributed to frequent erosion and flooding, urban waste management problems, urban pollution, and increment of urban heat island effects in most African cities and towns. However, few African countries have been given little attention to urban green infrastructure development like Nigeria, South Africa, Egypt, and Ethiopia (Adedeji et al, 2010).

Maximizing the delivery of multiple benefits and demonstrating how green infrastructure (GI) can deliver a diverse range of individual benefits to a depleting urban square. It must be stressed that, for an individual green space, their relative positioning within a built-up area and its connectivity with other areas are of paramount importance to ensure that the combined benefits of green infrastructure are maximized. With care given to planning, management, and community involvement at the landscape, community, and individual site levels, the benefits of green space can become addictive and even synergistic, far outreaching the sum of benefits from each site. (Spirn, 1984)

Urban green spaces which are primarily designed and managed to encourage green living can engender individuals from the community to come together for the first time, educate children and adults alike on natural history and issues such as climate change, act as a haven to our threatened landscape. Also, the visual and environmental quality of an area can be greatly improved, making people want to live and work there, generating the creation of local jobs, and increasing property values within the megacity. Creating and managing green infrastructure in this way comes at long-term financial and managerial costs. This report identifies the benefits of well-thought-out and well-managed GI, however, public and private sector bodies need to give serious consideration to investment in GI. The final outlook of a city's landscape depends on laid down sustainable environmental objectives. Where the emphasis is on absolute aesthetics, floricultural aspects of urban development. For the total image of the city, there is a need for conscious holistic planning (Lynch, 1990). This study proposes sustainable green resilience strategies, solutions, and improved city livability.

### 1.2 Research Questions

The main focus of this study is based on how to reconnect and integrate people in the mixed-used settlements with nature through UGI, this study explores various challenges re-

lated to the environmental, social, and economic perspectives of Urban Green Infrastructures (UGI) policy-making and implementations.

The following are the research questions:

1. What are the key components and perpetual gains that UGI offers to the cities?
2. How does urban greening support a greener economy and commercial activities?
3. How do we plan for UGI strategically in a harsh terrain like Lagos where less attention is given to greening?
4. How can we provide a green relief masterplan to the highly urbanized environment to have a sustainable city?

### 1.3 Aim and Objectives

The study aims to examine the extent to which the landscape and urban spaces of Palm Avenue, Mushin have survived the changes which have assailed the area to ensure a thriving habitat in the Lagos Metropolis. To achieve this the following objectives are to be pursued;

1. Determine the factors that have led to the change in land use of Palm Avenue and its environs by taking an inventory of existing green infrastructures and variables of the area, to create a strategic and sustainable framework for the conservation of the urban spatial configurations.
2. Assessment of the open spaces along the mixed-used district and the restoration of the degraded landscape and microclimatic settlements.
3. Provision of modern UGI solution using modern technologies and urban greening policy and masterplan for the Lagos megacity
4. Reshape the morphological elements of Changing Urban Spaces through green resilience, adaptation, and mitigation synergies.

## 2 LITERATURE REVIEW

Greenology is the act and science of greening using innovations and urban greening techniques with science and technology (Veera, 2008). Sustainable urban greening technology helps to transform urban spaces into a thriving landscape and sustainable ecosystems. This philosophy is aimed at pushing the boundaries of the art and science of greening for urban architecture and ecology. This modern innovation and technology can be seen in vertical greening, green walls, interior greening, urban farming, green roofs, green facades, green courtyards, green balconies, and articulated swales systems for natural storm-water management urban temperature control. There is psychologically improved health and wellbeing for humans, the environment experience when there is reduced heat, improved air quality, reduced noise, stimulates fauna and flora, cleans water run-off it sometimes provides alternative food sources and it always increases the value of properties.

It also qualifies a property for green ratings, enhances the design through aesthetics, and protects buildings from

direct impact from atmospheric effects. Studies have emerged that African cities are losing a good number of green resources and associated benefits through rapid development and inadequate planning (CLUVA, 2013). It has also shown that the majority of urban residents in West Africa are tenants with no interest in ownership, they find a room at a price they can afford (Okeyinka, 2014) they sometimes convert these properties to suit themselves. Frequent flood and erosion, pollution, uncontrolled waste management system, high polluted runoff that flows into lakes, rivers, streams, and coastal waters. Stormwater management is an increasing concern due to climate change and water supply and contamination of water sources are also another concern resulting from pollution. Urban greening strategic planning, development, and implementation have a great potential to conserve the surrounding environment and protect water bodies from polluted runoff and wastes.

Therefore, African cities/towns leaders should be invested consciously in UGI by budgeting adequate funds for greening. Research evidence shows that GI has a beneficial impact on mental well-being and cognitive function and it helps to create and promote a healthy and recreational environment for the urban community and has a better influence on various patient treatments. In some African countries, access to land and house ownership is limited then the majority of the people become tenants and their life is mainly dependent on the surrounding natural resources. Rakodi (1997) and (Okeyinka, 2014). Within the worldview context, Africa is generally assessed as a rural and the least urbanized continent with the antecedent high rate of slum development, crime, underdevelopment as well as overpopulation Adedeji et.al. (2010). Rapid urbanization in East Africa poses several serious challenges for planning, city development, living conditions, and a great challenge for urban ecosystem sustainability. To sustain their life some people try to solve their housing needs by getting land informally at the urban fringe. This result has become a problematic repercussion for proper land use and planned urban space (Bjørn, 2007).

The rapid rate of urbanization has engendered several challenges and problems similar to situations in other parts of the world and most of the cities are characterized by substandard and inadequate housing, slums, and lack of infrastructure, transportation problems, low productivity, poverty, crime, and juvenile delinquency (Mabogunje, 2002). Urban development problems in Africa could be viewed from both socio-economic and environmental perspectives. Thus, the cities are especially vulnerable to frequent flooding, erosion, and storm damage (Lawanson, 2006, and Youngquist, 2009). Most urban dwellers have very limited experience with green infrastructure development and underestimate the land-use decisions, so they do not understand its significance or the potential it can bring to their city and towns (Youngquist, 2009). Usually, urban environmental problems are mostly due to uncon-

trolled urban developmental processes and it occurs at the local, regional and global effects (Adedeji et al, 2010). Thus, the integration of the Urban Green Infrastructure approach can be smart and strategic and offer potential ways of consciously and effectively integrating biodiversity into spatial planning and sectoral considerations (SDC, 2010). However, with inadequate planning, the green infrastructure resource of African cities is being rapidly depleted and the communities have also missed the opportunity to maximize the benefits which are obtained from the existing green infrastructure resource (CLUVA, 2013).

At an urban policy level, planning and the planning system need to incorporate green infrastructure and an ecosystem approach to ensure that benefits are optimized in the long term, especially concerning climate change adaptation and biodiversity loss (CIWEM, 2010). Urban designers, landscape architects, and architects need to wake up to the call to plan effectively for this infrastructure, in recognition of the essential role it plays in the sustainable and climate-conscious development of all urban areas. Green infrastructure should be recognized as providing a wide range of environmental and quality of life benefits and as a result, built into all regeneration and development schemes from the outset (Oulia et al., 2009). Therefore, experience sharing, adopting the existing technologies and awareness needs to be raised about the importance of green infrastructure and ecosystem services, to link their protection with sustainable use and management of urban space. In urban design, the green infrastructure resource of African cities is being rapidly depleted and sometimes misused (CLUVA, 2013).

Awareness creation of the multifunctional benefit of green infrastructure and in a multidisciplinary way stakeholder involvement is essential elements of a successful urban sustainable planning system. These will have to be an assignment at all stages to build a stable community structure and support sustainable development. Urban green infrastructure (UGI) plays an important role in the many urban challenges of the 21st century. According to psychological theories, a reduction in arousal or activation produces pleasurable feelings if an individual is experiencing stress or excessive arousal (Berlyne, 1971).

## 2.1 Green Infrastructure in a Depleting Urban Landscape

Environmentalists are typically well aware of the potential of urban green spaces to contribute to human health and wellbeing, to species protection or provision of wildlife habitats, and for contributing to climate change adaptation. However, policymakers also need to be aware of other social and economic trends and emerging challenges, since these can be important drivers and risks for investing in UGI. (Ulrich, 1974). The findings have several implications for environmental planning and design. At the most general level, the results suggest that outdoor visual environments can influence individuals' psychological well-being, and therefore should be given explicit attention in planning

and design decisions. Most planners have some sensitivity for aesthetic aspects of environments, and there exists some direct empirical evidence showing that aesthetic benefits can be of considerable importance (Shafer and Mietz, 1969). The findings here imply that the importance of strategic urban greening is by no means limited to aesthetics only but also includes a range of influences on the emotional and psychological state of the users. It also shows how it helps the environment to reduce atmospheric heat. Urban parks and gardens play a critical role in cooling cities and provide a safe route for walking and cycling as well as a site for physical activities, social interactions, and recreation. Recent estimates emerged showing that lack of access to green open spaces and physical activities linked to poor walkability accounts for 3.3% of global death (WHO, HSD, 2012). Green spaces are very important to mental health. Having access to green spaces can reduce health inequalities, improve well-being and aid the treatment of mental illness. Studies also reveal that physical activities in a natural environment can help remedy mild depression and reduce physiological stress indicators. (WHO, 2001)

## 2.2 Urban Green Infrastructure, Urban Grey Infrastructure, and Blue Infrastructure

Urban morphological elements, degradation, and loss of urban connectivity are caused mainly by the development of grey infrastructure such as roads, urban settlements, and hydropower plants, dams, car parks poses significant threats to ecosystem coherence. The urban green infrastructure decisions will determine Africa's landscape for the next five decades.

The conventional infrastructure planning arrangements put in place by the government of Lagos State through the ministry of environment (MoE) and Lagos State Parks and Garden Agency (LASPARK) given the mandate to build neighbourhood parks in all the available open spaces within the metropolis cannot cope with the new challenges and need to integrate other aspects of urban green like the green wall, green roofs/gardens, urban agriculture which is some of the sustainable ecological urbanism. While grey infrastructure refers to the technical interconnected structures that support a society, such as roads, railways, water supply, sewers, power grids, telecommunications, green infrastructure is an interconnected network of green space that conserves ecosystem values and functions and provides associated benefits to society (Rees, 1991). We need all the types of infrastructure for us to have a balanced ecosystem and have to find ways of making the three types of infrastructure complement each other.

## 3 METHODOLOGY

This study employed a descriptive survey design of the existing site conditions in which the existing status of the independent situations was gotten during data collection without any manipulation of the variables.

### 3.1 Study Area

Mushin is located in the central part of Lagos Mainland. It is framed by longitudes 3°20'56.28"E of the Greenwich Meridian and latitudes 6°32'6.52"N of the equator. It is bordered by Isolo Road to the left and Agege Motor Road to the Right. The three major roads that cut across the Community are Ladipo Road (2.56km), Palm Avenue Road (1.45km), CAC Road (0.98km), and directly adjacent to Palm Avenue and Kumuyi Road which is also a residential neighborhood. Some of the prominent Residential Neighborhoods are Adekitan Street, Akinsola Crescent, Oduntan Street, Owhin Street, Olasehinde Street, Buhari Street, Silva Street, Omodigbo Street, and Sebanjo Street among others. The Metropolis occupies the heart of Lagos State. The metropolis is located on the sandy barrier-lagoon complex of the western Nigeria coastline. The study area is made up of eleven Local Government Councils including Lagos Island, Eti Osa, Lagos Mainland, Surulere, Ajeromi, Ikeja, Somolu, Kosofe, Mushin, Isolo-Oshodi, and Ikorodu.



*Plate 1: Lagos Map Showing Mushin LGA; Source: Goggle Earth Pro, 2018*



*Plate 2: Lagos Map Showing Palm Avenue District; Source: Goggle Earth Pro, 2018. Catalytic Area of Focus 1, 2, 3 & 4 showing the available open spaces for possible neighborhood parks*



**Plate 3:** Lagos Map Showing Palm Avenue District; Source: Google Earth Pro, 2018. Catalytic Area of Focus 1, 2, 3 & 4 showing the available open spaces for possible neighborhood parks.

### 3.2 Sample Frame and Population

A total of five hundred and thirty-three (533) houses containing over one thousand (1000) residents participated in this study. To achieve this, a stratified random sampling technique was used to stratify Palm Avenue and the neighboring streets in Mushin Local Government Lagos, Nigeria, into three catalyst points and three zones - Most densely populated, densely populated, and less densely populated. This selection cut across all various three levels of building types in each street. The age range of the respondents is between 18-60 years with an average age of 39. The total area within the Mushin Local Government Area considered is 17, 4644.24m<sup>2</sup>, and the Local Government Headquarters falls within the district. The responding facilities consisted of 533 buildings sitting on 272 plots of land. The total commercial building is 156 (29.3%), mixed-use buildings are 115(21.6%), while the residential building is 272 (49.1%). Primary data formed the basic source of information used in this study. This was obtained through the conduct of a reconnaissance survey and physical observations and administration of structured questionnaires. In the instrumentation, four validated instruments were used for data collection apart from the urban attributes scale. The personal attributes of the respondents in the study were gender (male and female), housing types (bungalow, high-rise/multi-level buildings), and socioeconomic status of the building (commercial, residential, and mixed-use).

### 3.3 Administration of the Instruments

The researcher administered the measuring scales, which guarantee the confidentiality and anonymity of the respondents. The researcher with the help of the research assistants explained all aspects of the questionnaire to the respondents. However, it took the researcher four weeks to administer and retrieve the distributed measuring scales. Meanwhile, out of 500 copies of the questionnaire administered in the selected streets connecting Palms avenue and Ladipo Road, Adekitan Street, Akinsola Crescent, Oduntan Street, Owhin Street, Olasehinde Street, Buhari Street, Silva Street, Omodigbo Street, and Sebanjo Street among others, 422 were adequately filled and valid for this study. Thus, 84.4% success of ques-

tionnaire administration and retrieval was achieved. The data collected through the questionnaires were analyzed using simple percentages and frequency counts for demographic information about the respondents.

### 3.4 Results

**Presentation of Respondents' Demographic Characteristics**  
This section presents the respondents' demographic data using frequency distribution tables.

**Table 1: Percentage Distribution of Respondents' by Age**

Age Distribution	Fre- quency	Percent (%)	Valid Per- cent (%)	Cumulative Percent (%)
18-30	285	67.5	67.5	67.5
31-45	96	23.0	23.0	23.0
46-60	41	9.5	9.5	9.5
Total	422	100.0	100.0	100

Source: Field Survey.

Table 1 above reveals that 285 or 67.50% of respondents were between the ages 18-30 years of age, 96 or 23% respondents are within the age bracket of 31-45 years, while 41 or 9.5% respondents are within the age brackets of 46-60 years. This table's results are not surprising since it shows that most young adults that are between 18-30 years of age responded to the questionnaire - this is the expected age bracket of the residents and commercial traders doing business along the major streets within the district.

**Table 2: Percentage Distribution of Respondents' by Gender**

Gender Distribu- tion	Fre- quency	Percent (%)	Valid Per- cent (%)	Cumulative Percent (%)
Male	327	77.5	77.5	77.5
Valid Female	95	22.5	22.5	22.5
Total	422	100.0	100.0	100.0

Source: Field Survey.

Table 2, above shows the distribution of the respondents by gender, 327 or 77.5% of the respondents were male, while the remaining 95 or 22.5% of them were female. This indicates that the majority of the respondents that attended the questionnaire were male. This shows that the dominant workforce of both skilled and unskilled labour are males.

**Table 3: Percentage Distribution of Respondents' by existing building types**

Physical Develop- ments	Frequen- cy	Per- cent (%)	Valid Percent (%)	Cumula- tive Per- cent (%)
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Mixed-use Development	113	26.7	26.7	26.7
Residential Buildings	68	16.1	16.1	16.1
Commercial/Retail Shops	196	46.5	46.5	46.5
Religious Buildings	13	3.1	3.1	3.1
Office/Administrative	32	7.6	7.6	7.6
Total	422	100	100	100

Source: Field Survey.

Table 3, above indicates that 113 or 26.7% of respondents were occupants of a mixed-used building, while 68 or 16.1% respondents were occupants of residential apartments (either temporary or permanent owners), 196 or 46.5% respondents are commercial shops owners (some of them have more than one retail shop along the Ladipo Road), 13 or 3.1% respondents have their place of worship (church/mosque within the neighborhood). 32 or 7.6% have their corporate offices along Palm Avenue road.

This table shows that 196 or 46.5% who are the majority of the respondents were commercial traders hence commercial activities are predominant within the district.

**Table 4: Percentage Distribution of Existing Land-use**

Five hundred and thirty-three (533) buildings sitting on 272 plots of land. The total commercial building is 156 (29.3%), mixed-use buildings are 115 (21.6%), while the residential building is 272 (49.1%). Primary data formed the basic source of information used in this study.

Land-use Zoning	Roads/Street Distances	Number of Existing Building (%)	Street Distances	Any Existing Greenery	No of Open spaces	Greening Remark
Mixed-use Buildings	125	29.6 %	5.4km	32	2	Needs Green Infrastructures
Commercial Buildings	156	37.0 %	4.6km	8	1	Needs Green Infrastructures
Residential Buildings	262	33.4 %	9.2km	115	1	Needs Green-Infrastructures

Source: Field Survey.

Table 4, above indicates that the total of both mixed-use and commercial buildings is 281 or 66.6% while 262 or 33.4% respondents were occupants of residential apartments (either temporary or permanent. This shows that the commercial activities there had overtaken residential spaces.

**Table 5: Percentage Distribution of Existing Green Infrastructure**

Extracts from the questionnaires?

S / N	Respondents	How Often (Frequency)	Percentage (%)	Remark
1	Do you have greenery incorporated into your building plan before government approval?	32	18.2	It shows that developers propose green lawn to their designs before approvals but it is never installed
2	Are you aware of the health benefit of greenery?	45	25.6	Respondent showed a high level of greener benefit awareness
3	Is your house a mixed-used apartment?	72	40.9	Most of the existing buildings are now mixed-used
4	Any plan to incorporate a green roof and green walls in your building?	20	11.4	Little or no knowledge of green walls, green roofs, and urban agriculture
5	Are you ready to plant and adopt two trees, lawn, and hedge plant for its sustainability?	17	3.9	Respondents have little knowledge on the importance of greenery sustainability and livability through plants adoption
Total		422	100	

Source: Field Survey.

Table 3, above indicates that 17 or 3.9% of the 422 respondents were ready to incorporate green infrastructure into their properties. This shows the need for decision-makers and policy enforcement agencies to enforce the urban greening agenda.



Plate 4: No defined pedestrian and cyclist routes



Plate 8: No sign of urban greenery



Plate 5: Uncoordinated commercial activities



Plate 9: undefined motorcyclist park and transit points.



Plate 6: Obstructive street signposts



Plate 7: On-street parking and unplanned setbacks

#### 4 FINDINGS AND DISCUSSIONS

This study was conducted to assess how the landscape is presently *thriving and the need to reshape the morphological elements of changing urban spaces* to enhance the green energy rating, well-being and the depleting urban spaces, the social relation based on psycho-social climate, psychological wellbeing components, and emotional intelligence along the Palm Avenue and the neighboring streets within Mushin Local Government district of Lagos state.

It was found out that Mushin was originally earmarked for residential estate development not until about two decades ago when commercial activities bewildered the area and most of the originally built residential apartments are now converted to commercial stores out-rightly while some of the buildings still maintain a dual status of a mixed-used building meaning that it still serves both commercial and residential purposes. 77.5% of the total respondents were male while this indicates that the total numbers of both mixed-use and commercial buildings (66.6%) are more than the residential buildings (33.4%) this shows that the commercial activities there had overtaken residential spaces (See Appendix A).

What properties owners do is that they allocate the ground floor of the building for commercial activities while they maintain the upper floors as their residential abode. The findings

showed significant positive correlations between socio-economic relation, psychological wellbeing control of self and events, happiness, social involvement, self-esteem, mental balance, sociability), emotional intelligence, and psychosocial climate. The outcome of this study further revealed that psychological wellbeing control of self and events, happiness, social involvement, self-esteem, mental balance, sociability), emotional intelligence, and psychosocial climate were significant in explaining the residents' and commercial traders' social relation. It was found out that 49.1% of the total residents still enjoy social relations which are accounted for by the combination of psychological wellbeing components, emotional intelligence, and psycho-social climate predominant urban space. The findings suggest that stressed individuals feel significantly better after exposure to nature scenes rather than to the chaotic Lagos hustle, struggles, and tensed urban open spaces lacking nature elements (See Appendix B).

The results further revealed that psychological wellbeing is a potent factor in explaining socioeconomic relations among people of a place especially Lagos. This might be as a result of the fact that the greener the urban space the better the psychological wellbeing of the people, who are the primary users of the services rendered by the urban green infrastructures. It will also improve the quality of life, which will be reflected an individual's ability to recognize the meanings of emotions, relationships, reason, and solve problems. This is in tandem with Spirn's (1998) assertions that humans thrive depending on adapting to the primary settlements in life-sustaining ways stating that human socio-economic survival depends upon adapting ourselves and our settlements in life-sustaining ways, designing places that reflect the interconnections with urban greeneries. These findings lend credence to *Greenology* philosophy of Sekeran (2008) who stated that adopting the green intelligence urban greening solutions using innovative technologies play an integral role in the creation of this urban pocket of Public Park by amplifying the extent of greenery within a small building footprint. Chow (2018) buttressed it by saying that the versatility of this vertical green allows it to be sculpted to adhere to the building design language of chamfers Whiles adding tactility to the façade at the same time providing a green relief to the highly urbanized environment like in Lagos, Nigeria.

## 5 CONCLUSION

This study has established that thriving habitats and landscapes can be reshaped to suit the well-being and the depleting urban spaces with the control of self and events, happiness, socioeconomic involvement, self-esteem, mental balance, sociability, emotional intelligence, and psychosocial climate of the environment. It is established that when an individual's perception of the environment is green he or she is more likely to exhibit appropriate interpersonal behaviors. Since positive social experiences are associated with general well-being, which generally contributes to public health – physically, emotionally, medically, and so on, there is a great need for a better future for our future by creating a sustainable and livable

green environment so we can have a balanced society. Lagos metropolis is in dire need of green urban space to sustain the growing population and to reduce the increased atmospheric temperature (urban heat). Open spaces are now very scarce and limited to provide recreational activity areas for the dwellers. An interest in urban green infrastructure must look in the direction of already built-up spaces and central business districts and commercial hubs within the metropolis. Above all, Lagos State Parks and Gardens (LASPARK) must come up with sustainable greening guidelines and effective policies that will encourage the placement of value on the urban and residential landscapes for a better, healthier, serene, and greener city. The people now know the importance of greening, social cohesion, and the need to restore our habitat so it can keep thriving and withstand the pertinent commercialization of the metropolitan city. We should dwell more on the therapeutic experience from nature rather than the anxiety on the huge cost of maintaining the green infrastructures.

## 6 RECOMMENDATIONS

Government at federal, state, and local government area level and private individual's intervention is necessary to properly accommodate greening policies in the urban landscape. The use of both government setbacks and private residential land areas requires a detailed understanding of the long-term urban greening goals and objectives of the primary urban space. Applying a comprehensive urban green infrastructure is an important approach to mitigate urban heat islands that happened during the urbanization, construction, and physical development process. Various research results show that the ambient temperature in urban areas is usually several degrees higher than that of their surrounding suburban and rural areas. The entrenchment of urban green infrastructure in the metropolis and environmental aesthetic scheme of the urban morphology may take into consideration the following recommendations:

1. Development of a conceptual framework of research on the urban greening master plan.
2. Adequate suitability studies to identify appropriate greening technology and solution depending on the location.
3. Reviewing the planning policies to incorporate green walls and green roofs on all government administrative facilities
4. Since the urban landscape is still thriving hitherto, it must be protected from further depletions.
5. Preparation of urban land use plan and regulatory mechanism and enforcement.
6. Comprehensive analytical assessment of the psychological wellbeing of the people within selected urban spaces to know their emotional connectivity to nature.
7. Workplaces, commercial hubs, and hospitals within the urban scenes to contained large amounts of natural elements.
8. There should be strategic physical development and urban planning that can promote these benefits and how innovative forms of governance can contribute towards



the creation and management of high-quality green spaces.

This study summarizes and integrates the main findings which are presented in the urban green. This includes debates around which benefits are provided by UGI and how these benefits can be articulated in ecological, social, and economic terms. Furthermore, we scrutinize the relationship between green spaces and social cohesion and discuss links between biological and cultural diversity. Hence, UGI is perceived as a comprehensive landscape approach acknowledging services and benefits from a coherent green, grey, and blue network at different urban spatial configurations and levels, linking up neighbourhoods, districts, and cities. Securing the full services and benefits of UGI requires both strategic planning as well as participatory governance to address the variety of challenges associated with local sustainable developments to promote the health, cultural, social, and economic wellbeing of urban residents.

## 7 APPENDICES

### APPENDIX A: EXISTING MUSHIN OPEN SPACE CHALLENGES



*Plate 10: Picture showing a mixed-use apartment Plate 10 is a typical remodeled mixed-use apartment along the Ladipo junction of Palm Avenue Road.*



*Plate 11: Dilapidated transformer opposite a commercial bank.*



*Plate 12: Existing Residential Apartments*



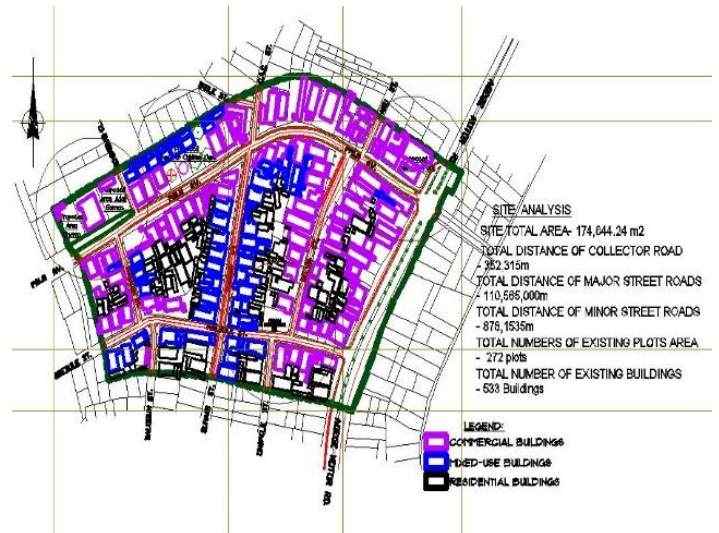
*Plate 13: Pictures showing Untidy Open Drains along with the Road and Commercialized Buildings*



*Plate 14: Improper Taxi parks and Bus Stop along the Palm Avenue*

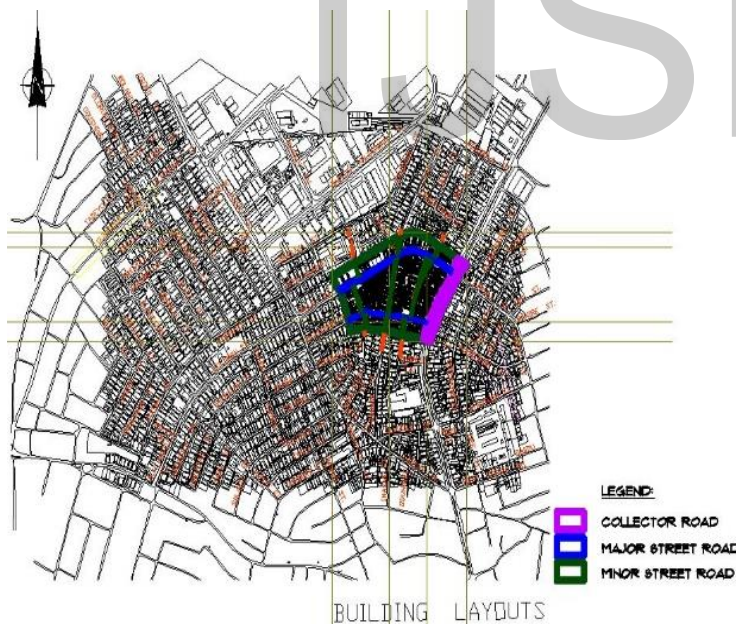


**Plate 15:** Few trees and green space setback by the Local Government Secretariat.

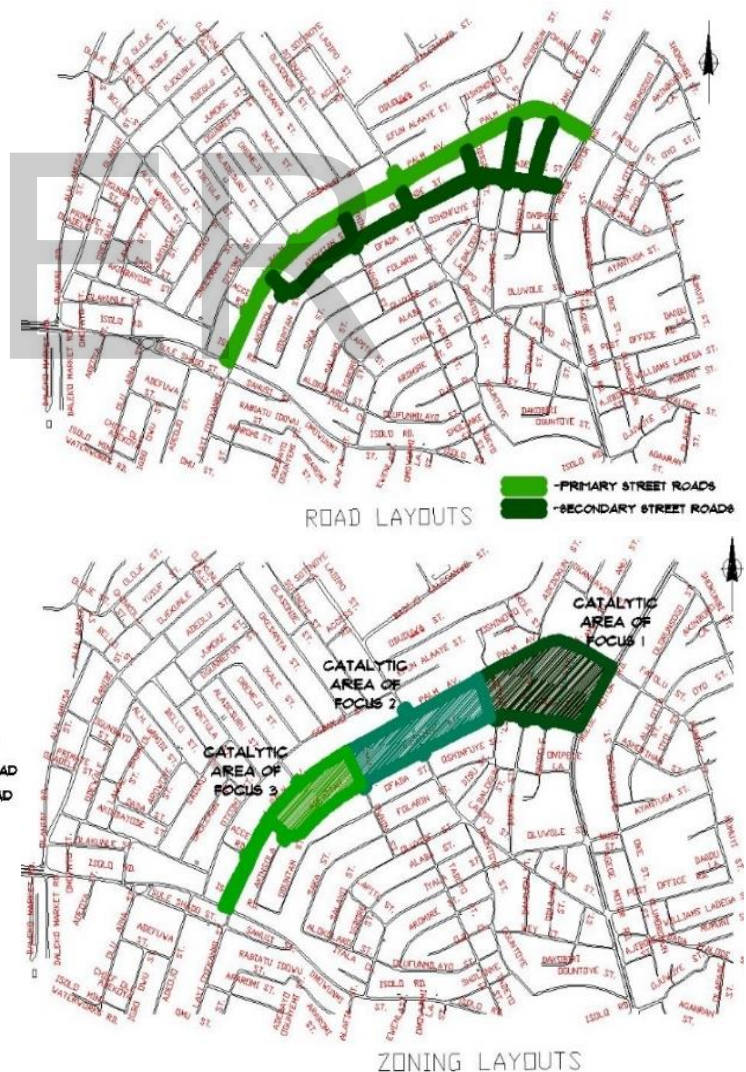


**Figure 4:** Map showing the georeferenced layout of the district and the study area. Layout showing the 533 buildings and 272 plots within the study area

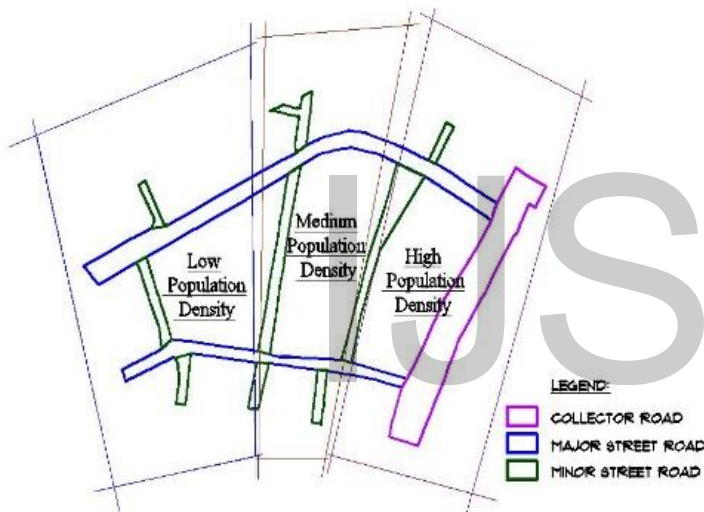
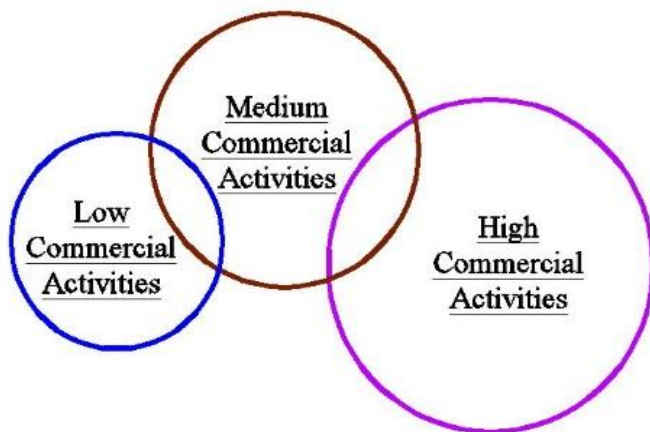
**APPENDIX B:  
GEOSPATIAL CONFIGURATIONS OF THE AREA OF STUDY**



**Figure 3:** Map showing the georeferenced and digitized layout of the districts and the study area. Layout showing the buildings and plots within the study area.



**Figure 5 & 6:** Layout showing the road networks considered for green infrastructure upgrade. Layout showing the catalytic areas of focus and zoning of the core district



**Figure 7(Above) & 8(Below):** Population densities of the study area, commercial activities bubble flow within the study area. The bubble diagram and sketches above show the population densities and the road networks.

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