# USING SUSTAINABLE GREEN STRATEGY TO UPGRADE BLIGHTED URBAN SPACES IN ENUGU, NIGERIA

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## Abstract
At the dawn of urbanisation, city planning seem to be so overwhelmed as to negate all principles of the garden city in its pursuit of utilizing every space (maximizing every inch of urban land for profit). This has led to the massive depletion of proposed and existing green spaces resulting in the profusion of urban concrete and glass jungle as our built environment. With recent studies, planners have woken up to the need of reintroducing green spaces into existing urban areas to help revitalize them. This study aims to emphasize the dire need for green spaces in all categories of urban design proposals for human and ultimately environmental gains. The methodology employed is descriptive with extensive literature review. Enugu metropolis was used as case study to show how the decaying inner core can be brought back to life. The inner parts of Enugu were laid out with well-designed green spaces. It is recommended that the city planners and designers should think of incorporating green infrastructure and use of green strategy in their urban design proposals to check the endemic blight of the city centre, and then show how this decaying green spaces can be brought back to life which will help them gain more relevance instead of their current state of neglect. A definite green guide should be formulated for their subsequent maintenance.

**Keywords:** City Centre, Garden City, Green Spaces, Urban Blight, Urbanisation.

## Introduction
Urban spaces evolved from history, as urban areas develop in the process of urbanization. Urbanization is characterized by rapid population growth, mainly from movement of people from rural to urban centres. Urbanization creates enormous social, economic and environmental changes which lead to rapid urban growth. The process of urban growth can be categorized into two: Organic and Planned (Carmona, Heath & Taner, 2004) with some ad-hoc actions.

Many urban towns in Nigeria grew organically. That is piecemeal with some ad - hoc actions by replacing old buildings, making new layouts and adding to the existing stock. This characterizes most urban towns in Nigeria of which Enugu is not an exception. With this kind of scenario there came into existence some urban spaces that have lost their traditional setting and meaning but have not been properly integrated into the urban fabrics such as shrines, market squares, junctions and foot paths turned roads, etc.

It is the aim of this study to examine such urban spaces, identify their present conditions and proffer a workable sustainable green strategy for the inner city of Enugu metropolis. To do this well the researchers will appraise literature on sustainability, urban design issues and green strategies using descriptive statistics to present data gathered and subsequent analysis.
Urban centres in Nigeria seem to neglect the use and maintenance of urban open spaces as designed and provided for in layouts and neighborhoods. This neglect might be due to several factors (of which current economic situation of the country and general lack of interest in their development could be part) and as such these spaces are left fallow. This state of misuse or disuse of these urban open spaces prompts further action from people in power (government) into turning such spaces into more profitable use 'seemingly' by change of use (rezoning).

These urban open spaces form the basis for the green strategy that is the foundation on which green strategy is developed. Green strategy is used to connect existing green areas to help in improving the ecosystem. This will conserve natural values and functions such as clean air, fresh water so on (European Commission, 2010). Green strategy informs on green infrastructure which is the ecological framework of the city needed for environmental and economic sustainability (Benedict & McMahon, 2002)

## Materials methods

### Urbanisation

Urbanisation refers to population shifting from rural to urban areas. That is the gradual increase in proportion of people living in urban area. This gradual increase in population and development manifests in changes in urban system, land use pattern and social ecology (social and demographic composition of neighborhoods, built environment and nature of urbanism). Urbanisation can be expressed well as population change, political change, cultural change, economic change, social change, technological change and environmental change, (Knox & McCarthy, 2005). This is seen in towns losing their village culture (common bloodlines, intimate relationships and communal behaviour) to acquire urban culture (distant bloodlines, unfamiliar relations and competitive behaviour). Generally urbanisation is often seen as a negative trend with bad effects on quality of life and the environment. United Nations had projected that by 2008 half of the world's population would live in urban areas and by 2050 64.1% of population from developing world and 85.9% of population from developed world would be urbanized. With rapid urbanisation, urban centres need urgent actions to make sure that the designed green spaces within would not disappear totally.

### Urban Spaces

In the history of urban development, urban spaces has evolved. It can be described as all the spaces around buildings connecting them, viewed in three dimensions. It could be land, water or air located in urban area (Emenike, 2014). These urban spaces could be in their natural form or man-made state that is developed condition. Urban spaces could be suitable for

natural areas and its processes; wild life, native plant habitant, stream and river corridors, etc or developed into formal gardens and parks for recreation. Urban spaces aids health in the inner cities by the provision of light, clean air, sun, ventilation and access to open spaces. It also makes for liveable environment and proper functioning of natural processes. This is manifested in the setbacks for individual plots as stipulated and enforced by the town planning laws, also in respect of setbacks to stream/river, trails and buffer zones. Urban spaces also improve connectivity within urban areas and promote well-being among the inhabitants (McHarg, 1992).
For cities to function properly there is a need to protect these urban open spaces, by way of legislation and integrated effort from all stakeholders.

**Sustainable Development**

In recent years, sustainable development has become very popular. It implies balance between production and consumption of goods and services e.g. in our building activities houses, offices, factories, stores, etc. The various activities should be done without harming the natural environment. The natural environment provides humans with everything from food, air, water, land resources etc that sustains life and also serves as 'sink' for our waste. Sustainability harps on the limit to carrying capacity of the natural environment and calls for caution on our use of natural environment and its resources (Daniel and Daniels 2003). It was this concern for our common environment that informed the Brunt land report of 1987 on sustainable development which stated that 'development that meets the needs of the present without compromising the ability of the future generations to meet their own needs'.
This implies that in our urban areas especially the inner city, there is very urgent need to set up strategies that help the areas to rejuvenate themselves for proper functioning of the environment.

**Green Strategy**

Going green is becoming very fashionable now but it is not just about the colour green. It is about the process and the product.

Green strategies in urban concept deploy the use of green infrastructure and encourage green construction (reducing the environmental footprint of buildings, reducing on the use of resources and reducing in the amount of waste generated). Green infrastructure helps in maintaining healthy ecosystem such that they can continue to deliver on valued services (clean air, fresh water, animal habitat) and also exhibit social, economic and environmental benefits (Benedict & McMahon, 2006). Green infrastructure also reconnects existing natural areas and therefore improves the overall ecological quality of the broader countryside. Green construction on the other hand is the construction and operation of green building which will promote a healthy environment, not to disrupt the land, water resources and energy in and around the building.

Green strategy's aim is therefore to reduce carbon footprint of buildings on the environment;

- By reducing waste, pollution and degradation on environment.
- By efficiently using energy, water and other resources.
- By protecting occupants' health and improving productivity.

**Urban Design**

Urban design seeks to develop policy framework where physical designs are created and managed (both the built and natural environment). It is an interdisciplinary field that encompasses architecture, landscape architecture, urban planning, civil and transport engineering and so on. It is primarily concerned with the physical form of the city manifesting in building façade, street network, in-fact the urban form, (Beckley, 1979). In all urban design is expected to achieve functionality and symbolism of the city.

**The Study Area (Enugu Metropolis)**

Enugu is the capital of Enugu state. It is one of the oldest urban centres in south eastern Nigeria that started as a colonial town when coal was found in 1909. It acquired township status in 1917 as a second class town, (Emenike, 2014).Enugu has grown to become a major administrative, educational and trading centre in addition to coal mining. In its growth, Enugu stated in 1916 with two main quarters; GRA – government reserved area known as European quarters for white coal miners and coal camp known as African quarters for indigenous workers, (Emenike, 2014).

The town grew very fast, with population increases as 1921 (3,170), 1953 (62,764), 1963 (138,457), 1991 (464,515) and 2006 (717,291), (Emenike, 2014) and so there was need to plan and layout the city properly. The planning law of 1946 was very much behind the creation of these layouts and green spaces as shown on Table 1 below. Enugu can be conveniently be divided into three zones; core, intermediate and the fringe/periphery as shown Table 1 below. Enugu has grown to engulf many native enclaves such as Ogui, Ngwo, Emene, Nike, Amechi, Ugwuaji and Akwuke, creating the spaces as noted earlier.

| S/No | ZONE | OPEN SPACES AVAILABLE | LAYOUT |
|---|---|---|---|
| 1 | CORE | Polo Park, Murtala Mohammed Park, Cemetries, Ejindu, Ngwo, Eze, Onwudiwe, F.G.N. Okoye | Aria, GRA, Ogbette, Uwani, Udi Siding, Iva Valley |
| 2 | INTERMEDIATE | Osadebe Park, Afia Nine, Edward Nnaji, Brown and Brown. Okpara Square Park, Oakland. | Asata, Ikirike, Ogui, New Layout, Trans Ekulu, Asata River, Independence Layout, New Haven (West + East), Second Ave. |
| 3 | PERIPHERY | Housing Estate Park, Hilltop Park, Akwuke Beach. | Idaw River, Achara Layout, Maryland, Republic, New Era, Jioto, Awkunanam, Emene, Riverside, Thinkers Corner, Abakpa, Ugbo |

| | | | |
|---|---|---|---|
| | | | Odogwu, Golf, Garriki. |

Table 1 Zoning of Enugu Urban Source*: Adapted from Emenike, 2014.*

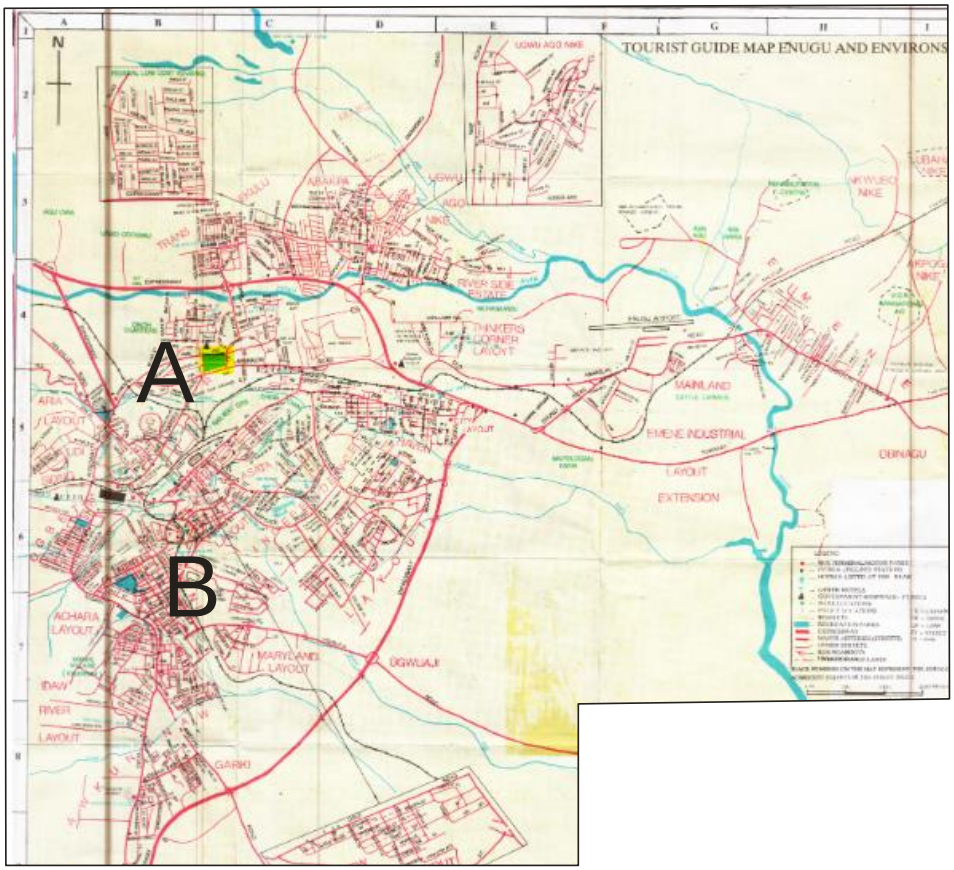



Plate 1. Map of parts of Enugu showing (A - Polo park, B - Muritala Mohammed park). Source: Department Of Surveying and Geoinfomatics, Enugu State University of Technology, Enugu

**Discussion of Findings**

The discovery of coal in Enugu in 1909 was the major catalyst of the creation, growth and urbanization of the town. It started with the coal miners quarters (both the natives and their expatriate supervisors) and expanded to accommodate other workers and immigrants from the rural areas.

From the table 1, the inner core of Enugu had prominent designed and laid out green spaces but with time signs of misuse and neglect started showing on them. Some of them have since been changed to some other use such as the popular polo park which now houses Enugu polo park mall (Shoprite) and so losing most of its greens as shown on plate 1 below.



Plate 2. Polo park mall (Shoprite). *Source: Researchers' field work.*

Also the Muritala Mohammed Park is facing neglect and has lost some quantity of space to road network, see plates 3 and 4.



Plate 3. Murtala Mohammed Park (old) *Source: Researcher' field work.*




Plate 4. Murtala Mohammed Park (new) *Source: Researcher' field work.*

Another prominent park is the Ngwo Park which has been neglected and is been eaten away bit by bit and converted to other uses as shown on plate 5. In the picture shown, the trees used to be well trimmed but now they have grown wild.



Plate 5. Ngwo Park. *Source: Researcher' field work.*

In all it is envisaged that in the current planning and management of Enugu city, the benefits of sustainable development, green strategy and urban design be integrated to maximize their gains to the environment and human beings at large.

## Conclusion

The urban open spaces as occurred in the city were identified and a proposal on how to integrate them more effective use within the town was advocated. This will help all the natural functions especially percolation of flood waters to charge the ground waters. It was also put forward that reintroduction of green areas with native plants will help reinvigorate the inner core of the city. It will also combat urban heat that is prevalent with concrete structures in the built up areas, filters the air and attenuate sound.
It was advocated that the populace be enlightened on the need to plant trees around them for maximum satisfaction and enjoyment of their properties.

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