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SUSTAINABLE REAL ESTATE: AN ANALYSIS OF OPEN PUBLIC SPACES INCORPORATION IN REAL ESTATE DEVELOPMENT IN KENYA.

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Abstract

Open public spaces are an integral part in sustainable development. The social value that emanates from this interaction within the spaces has been greatly undermined by the economic value of the developments within the country in the recent past. The introductory part of this paper seeks to define public spaces, their value and importance to sustainable real estate. It also seeks to explain the extent to which the spaces have been undermined and the underlying causes for this. The paper further seeks to investigate the conservation techniques applied on the already existent open public spaces in Kenya.

The paper presents an analysis of real estate developments in different parts of the City of Nairobi, Kenya. The essence of the analysis is to give a clear depiction of the extent to which public and private developers have incorporated open public spaces in their developments. The paper analyses the legal framework governing the allocation of open public spaces in developments within the country. In addition, it seeks to analyze best use practices in the world over and how these can be replicated in Kenya.

The paper concludes by making recommendations on how to incorporate open public spaces in real estate developments and their appropriate conservation methods.

Key words: sustainable development, open public spaces, social value, economic value, real estate.

INTRODUCTION

Open public spaces are a vital part of a society. They are planned for in order to meet various societal needs which include social, political, economic and aesthetic needs. Open public spaces are defined as the social spaces that are open and accessible to people mainly for recreational purposes. They can be categorized into city wide, intermediate or neighborhood spaces and individual spaces. The city wide spaces are designated for large populations and are mainly nationally symbolic. Intermediate spaces are within localized portions of the city serving multiple residences. Individual spaces are on a small scale and serve individual buildings for example an enclosed courtyard (Stanley et. al, 2012).

Some of the economic values of open public spaces are; increase in property values and taxes as explained by the proximate principle according to Crompton (2005), availability of employment opportunities, business attraction and recreation value. The social values are; they are places where communities interact, they provide an identity to the communities, they improve the communities' health and fitness through exercise and meditation, they are places where families hangout and reconnect to improve their bonds through picnics and other activities and they are used in carrying out cultural and sporting activities. The environmental values are the improvement and maintenance of biodiversity and enhancement of the air quality and control. The aesthetic values are the maintenance of the heritage and beauty of an area and the improvement of the landscape. The political values include the holding of political gatherings and barazas within the spaces.

The main focus of this paper is the incorporation of individual and intermediate spaces in real estate developments.

PROBLEM STATEMENT

In the past decades, the role of public spaces went unnoticed due to the fact that they were dominant as surrounding environments to human beings comprised of forests and large amounts of space. Human beings were therefore accustomed to these spaces and their benefits while remaining aloof to their value. In the recent past we have experienced an upsurge in uncontrolled developments that have taken up those spaces therefore leading to a constant decline in their availability.

The City of Nairobi, Kenya, was established in 1900 with a population of 11,500 people. Over the years this population grew exponentially to an approximate of 3.1million in 2008 when the last census was carried out and it continues to grow at a rate of 2.11 percent annually. The boundary of the city has also expanded from 18 square kilometers in 1900 to 696 square kilometers in 2016. This population growth and provision of key infrastructure including the provision of open public spaces has not been commensurate. The initial city master plan of 1948 was built on the neighborhood concept, allocating 27.5 % of the city to open public spaces serving a population of 250,000 people (Makworo, 2011). The master plan considered the spaces as areas of cultural interaction, sporting activities and leisure. It made provisions on the functionality of the spaces by putting an emphasis on their compactness and consolidation (Kangai, 1990).

After 1963, the population within the city increased due to Africanization of the city which was as a result of the newly found independence resulting into uncontrolled urbanization characterized by poverty, unemployment and housing problems. This led to illegal alienation of open public spaces to private developers and the remaining ones deteriorated due to the lack of management. The master plan of 1948 was revised in the 1970s and they came up with the 1973 Nairobi Metropolitan Growth Strategy. It was a long term planning and policy guide with broad long term policy directions, strategies and possibilities for the development of Nairobi City. It captured the conservation and maintenance of the open public spaces through development control and zoning. The building code of 1968 also made provisions for open public spaces through the stipulations on plot ratio and site coverage (Makworo, 2011). Article 69(1A) of the Constitution of Kenya 2010, gives a stipulation on sustainable exploitation, utilisation, management and conservation of the environment and natural resources and the equitable sharing of the accruing benefits.

However, these provisions are not reflected on the ground as evidenced by the absence of controlled developments and the outright violation of the building code due to the lack of consideration of the plot ratios and site coverage as can be seen by construction of back to back buildings today (UN-Habitat, 2016). In the world today, people value economic benefits more than the social, environmental and aesthetic benefits and therefore tend to make comparisons of the economic benefits of developments to benefits of open public spaces and this has led to developers neglecting the wholesome value of open public spaces to the society. This is very evident in the lack of open public spaces in real estate developments as more developments are put up where these spaces ought to be (Ghanbaran, 2014).

1.2 Research objectives

To determine the extent to which open public spaces have been undermined in real estate developments in Kenya.

To analyse the underlying causes of undermining of open public spaces in Kenya.

To investigate the conservation techniques applied on the already existing open public spaces in Kenya.

To analyse the best use practices of open public spaces incorporation in real estate developments in the world over.

1.3 LIMITATIONS OF THE STUDY

The Lack of sufficient information on incorporation of open public spaces in real estate developments as researchers tend to lean more on the planning field than the real estate field.

Data collection on land is difficult as the land matter is a sensitive issue within Kenya.

2. LITERATURE REVIEW

2.1 Introduction

Literature review entails reading literature related to the topic of research and from several sources cited by other researchers. It is the analysis of textbooks or manuscripts and involves the works the researcher conducted in order to understand and investigate the research problem. The chapter has been structured as review of past studies.

2.2 Benefit

A benefit is an advantage from something. According to Morris (2003), open public spaces have many benefits such as economic benefits, environmental/ecological and aesthetic benefits, social benefits and political benefits. Some of these benefits are quantitative and can be directly ascertained using market values such as the economic benefits while the others cannot be directly ascertained using monetary units. Economic benefits:

According to Morris (2003), there are many economic benefits that accrue from the incorporation of open public spaces in real estate developments. Open spaces have an impact in the economy and contribute to the flow of monies to the economy. The incorporation of open spaces increases 'urban greening' which attracts investors, new businesses, tourists and customers. These open spaces have a great impact on real estate values as they do greatly appreciate. The improvement of health, a social value, has a chain effect in the sense that health and healing reduces household incomes spent in treating diseases thus monies can be redirected to other productive uses and healthy people are often more productive than those who are not (regional public health, 2010).

Quality of life is essential for both workers and customers and the presence of open public spaces is an indicator of good quality of life and therefore is beneficial in business attraction and also retention. The spaces increase the values of property within areas where there are situated and thus increases local taxes which are based on values and thus an increase in revenue. Open spaces are often situated on previously neglected land and this promotes renewal and redevelopment. The cost of recreational facilities within private spaces gives an approximate economic value of recreation in the public open spaces.

Social benefits:

According to Morris 2003, one benefit is open air recreation. People get to enjoy the open air within the open public spaces. In New Zealand, the spaces have greatly improved the society providing a sense of belonging and an opportunity to learn from one another and engage in physical activities. It has improved the sense of pride among members of different communities. The spaces allow each member of the communities to participate in environmental conservation actively (regional public health, 2010).

One such group that largely benefits from the presence of open spaces is the children. According to Gharahbeiglu (2007), in the early education of children there is need for free play. Free play is self-motivated, free from direct supervision by adults and quite aimless. This free play is extremely crucial for the growth of children. In

the past Iranian neighborhoods and alleys were secure enough for children's play, the fields that were present in the past were maintained and well managed. However, with rapid industrialization the spaces were occupied by developments and the others remain largely insecure. Therefore parents have resigned to keep their children under close supervision disallowing them to engage in play activities and this is a great impediment to their developmental and physical growth and in particular learning the art of independence. They are also essential to the aged in society.

Environmental values:

As climate change impacts become more intense and frequent, there is need for countries to come up with innovative shields against these repercussions in order to protect the wellbeing of their people. One way in which urban places can shield themselves of these effects is through open spaces. There are essential in the provision of clean air and also water. They can aid in the protection of biodiversity, provide for carbon sequestration and cool cities. They increase the resilience of communities (regional public health, 2010).

Political values:

According to UN-Habitat (2015) (UN-Habitat, 2015) (Okaka, 2014), open public spaces promote civic empowerment and have great value politically. They promote people's rights and offer place for political assemblies and political rallies too where people can exercise their freedom of expression. These places allow leaders to meet with those they represent. In Kenya such meetings include barazas and political rallies. Well managed spaces promote governance through cohesion of the people and reduction in crime rates.

2.3 Provisions/Regulation on incorporation

According to Ireland (2009), there is great need to properly design and locate open public spaces. Local area plans can be used to identify the locations for the larger spaces. Some of the standards in place are the qualitative standards which include design, accessibility, variety, shared use, biodiversity, sustainable urban drainage systems and making provisions for community gardens and also allotments.

According to Cowley (2015), Spain defines quality of its open spaces on the basis of relations between neighbors, civic participation, and cooperation among people which can all be defined as social cohesion. This cohesion is anchored on the configuration of the spaces in terms of multi-functionality, its density and shape. If a space complies with the basics then it is termed as livable. The urban design should create spaces that are attractive, useful, economically successful, safe, socially equitable and environmentally sustainable.

The design should meet user needs which include both passive and also active recreation to meet this, a range of open public spaces should be provided to ensure a variety. The design should ensure the safety of the users through public lighting especially after dark, proper and sufficient supervision, surveillance and boundary treatment. Durable materials should be used in the implementation of the design. According to regional public health (2010), an urban design should be intertwined with the design of open public spaces to ensure that there is a linkage to the open spaces, to ensure that the particular spaces provide a cultural and social interaction platform and that the environment allows and encourages people to be physically active. Green infrastructure should be incorporated in the design too such as natural

means of drainage filtration, bikeways, canopy cover and green freeways. Open public spaces should be located within ten minutes' walk from the majority of the homes. Playgrounds in particular should be within areas of residence, easily accessible and should be in areas overlooking the dwellings for supervision while ensuring that the playgrounds are not causing any nuisance to the residents. Accessibility should be democratic allowing everyone to reap benefits from the spaces (Ireland, 2009).

The use of Open public spaces should be fully maximized through sharing of the spaces among many users. These users include male and female users, the young and old, and the physically challenged. The spaces should be indiscriminate with facilities for all. Multi use allows different people to use the spaces for example, an open space can provide a play area for children, a garden for seating, a picnic area and a ground for teams to contest and compete.

Open public spaces should be used to reduce runoff impact on the environment. Allotments can be made by authorities to locals for the purposes of cultivation. The spaces should be ecological to promote biodiversity both aquatic and terrestrial. When the open public spaces are large, they should be used to preserve the environment, flora and fauna.

Some of the recommended quantitative standards include allocation of open public spaces on the basis of hierarchy. It suggests the calculation of population in order to balance out community with density. That is the number of residents with the size in terms of area of the open public space and the number of spaces within the total area (Ireland, 2009).

According to Ireland (2009), one of the guidelines on open spaces is that every house should provide an area for open private space behind its building line. The size of it determined by plot widths and the separating distances between buildings. For places where a communal space is provided such as a courtyard then the houses can have a small patio. For apartments, outdoor space is essential. Rear gardens, patios at ground floors and balconies at those above ground, well landscaped areas and roof gardens that are secure can be provided in place of courtyards.

2.4 Management

One of the key issues surrounding open spaces is their management. The management of open spaces should be intertwined with the management of urban growth. The fields associated with the issues of open spaces include urban studies, economics, environmental law, geography, planning, sociology, landscape ecology and political science. Some of the policies that can be adopted to protect open space include, public ownership of the spaces that is in fee simple state, regulation such as cluster zoning, non-transitional zoning, mitigating ordinances, exclusive zoning and large lot zoning. Incentives can also be applied.

Public acquisition of open spaces at both different levels of the government and the management of the spaces by the government adequately deals with the issue of improper management of open spaces and their misuse by public entities. Regulatory approaches also ensure that developers set aside the required areas for open spaces while protecting environmentally sensitive areas. Cluster zoning for instance allows concentrated development on small lots leaving the remainder as open space. The space can then be managed by nonprofit organizations, local governments or private

developers. The use of open public spaces should be well defined to avoid conflict such as those of residents which include; hawking, dumping of garbage, airing of produce such as cereals, colonization by the street families and animal grazing (Okaka, 2014). Some of the problems resulting from mismanagement and poor management of open public spaces are air pollution, congestion, and lack of shelter, insecurity, hawkers' interference, noise, unmaintained facilities and garbage dumping (Akivaga, 2011).

Community led management is an approach that can make the management of the spaces efficient. The concept of community managed open public spaces allows members of the community to participate in the management of open public spaces. This empowers the members of the local communities to be more active in the management of their environment, to be more innovative in approaches of management and to customize the spaces to their local needs.

2.5 Best use practices

Mexico City

According to Scruggs (2016), Mexico's population is so large that the authorities have not been able to determine the exact numbers. This led to the creation of a Public Space Authority (AEP) to ensure that the concept of livability was embraced through improving the quality of urban life. It aims at prioritizing human needs above car needs and infrastructural needs. Parts of the initiatives include:

The introduction of tiny pocket parks in tightly packed neighborhoods. This enhances the quality of social life amongst residents despite the concrete jungle around them. The closure of major downtown thoroughfares to traffic weekly to allow for strolls on Sunday.

The authority regulates developers' behavior. This is facilitated by, the government through incentives to developers to shape developments' direction and regulations put in place to preserve the open public spaces within the developments.

The transformation of wastelands into open public spaces serviced with WI-FI zones creating public internet spaces. This provides for the people with no internet access. The authority has facilitated the re-organization of trade in public spaces by creating specific trade areas to increase free foot flow and accessibility in the available open spaces.

These initiatives have gone a long way in ensuring that public spaces are created, maintained and conserved despite the rise of developments in the city. They recognize the value that public spaces yield to human lives and the importance of addressing human needs rather than car needs or infrastructure needs. Mexico is therefore the best case example of conserving open spaces despite the real estate developments that take place.

All the above initiatives can be integrated in our conservation techniques in Kenya to ensure sustainable maintenance of open spaces.

RESEARCH AND METHODOLOGY

3.1 Research design

The main objective of this study was to find out the level of open spaces incorporation in real estate developments. A combination of both the qualitative and quantitative methods of research was employed for the purposes of this study. This dictated the method of inquiry, collection and analysis of data.

The target population was made up of Kasarani area of Nairobi County due to its current upsurge in real estate developments. An observation sheet was developed focusing on the level of open spaces incorporation in real estate developments. The other parameters were premised on the main objective. They included; the management and conservation of the spaces, accessibility and safety. These parameters would determine the functionality levels of the spaces. According to Arleck and Settle (1995), it is seldom necessary to sample more than 10% of the population provided that the resulting sample is not less than 30 and not more than 1,000 units. They recommend a minimum sample of 100 for 1,000 population. A total population of 1000 residential developments in the Kasarani area were considered with the sample size set at 10% of the population, hence 100 samples were considered. The simple random sampling method was used in choosing the samples as the probability of a real estate development having incorporated an open space was a key consideration.

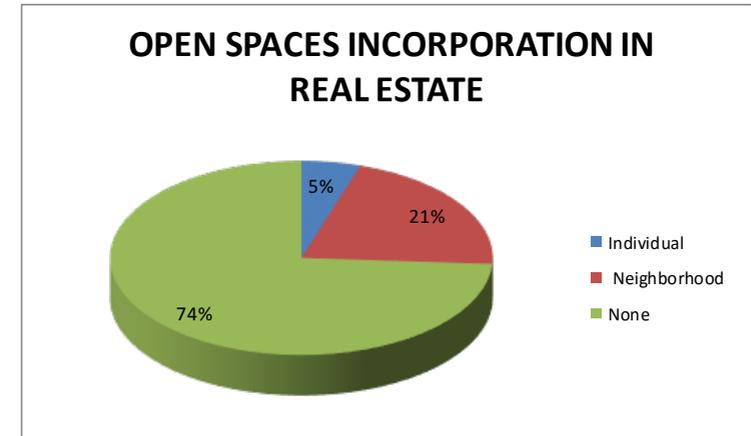
4. Data analysis and interpretation

The data was analyzed according to the outlined parameters.

4.1 Open spaces incorporation in real estate

Figure 4.1

Parameter	Description	Magnitude
Incorporation	Individual	5
	Neighborhood	21
	None	74



Source: Field Survey 2016

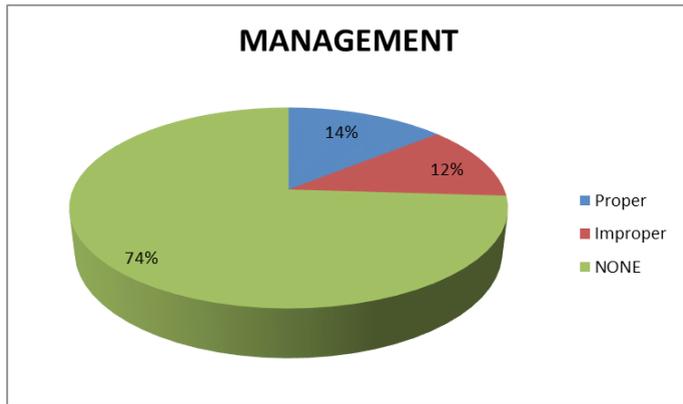
Of the 100 residential places visited, only 26 had the aspect of open spaces. These were classified as either individual open space; these were the privately owned open spaces with limited access. Neighborhood open spaces were shared amongst the estates making them public and easy to access. Individual open spaces were found to be only 5 while neighborhood spaces were 21.

4.2 Management and conservation

Management level was mainly determined for the neighborhood open spaces as the individual spaces were all well maintained. The management of the spaces was determined to be either proper or improper. Proper management was defined as those that had a system in place for access, cleaning and use. Those that were properly managed and conserved were also well maintained to maximize on use and were aesthetically pleasing.

Figure 4.2

Management	Proper	14
	Improper	12



Source: Field Survey 2016

4.3 Accessibility

The open spaces were classified according to their accessibility. The modes of accessibility identified were either restricted or unrestricted. We defined restricted accessibility as that which was not open to all and required some credentials to access them. Unrestricted accessibility was defined as those which were open to all at any time.

Figure 4.3

Accessibility	Restricted	5
	Unrestricted	21

Source: Field Survey 2016

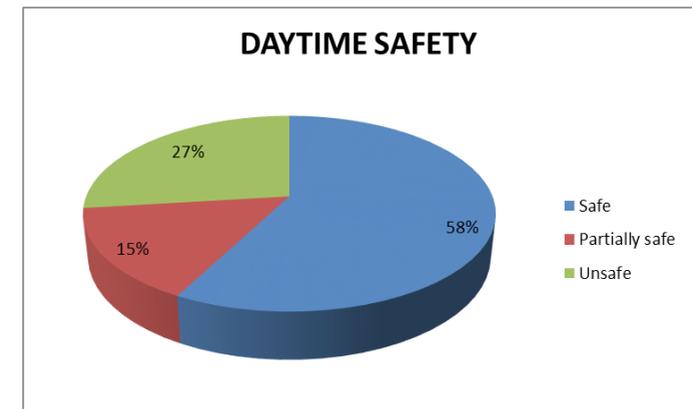
We noted that all the 5 individual open spaces had restricted accessibility as only the residents in the particular development were allowed to access them while the 21 neighborhood open spaces had unrestricted access.

4.4 Safety

Safety in the spaces was defined through the ease of use, level of activity and type of activity conducted on the open spaces. Safety in the open spaces was also determined during the day and at night.

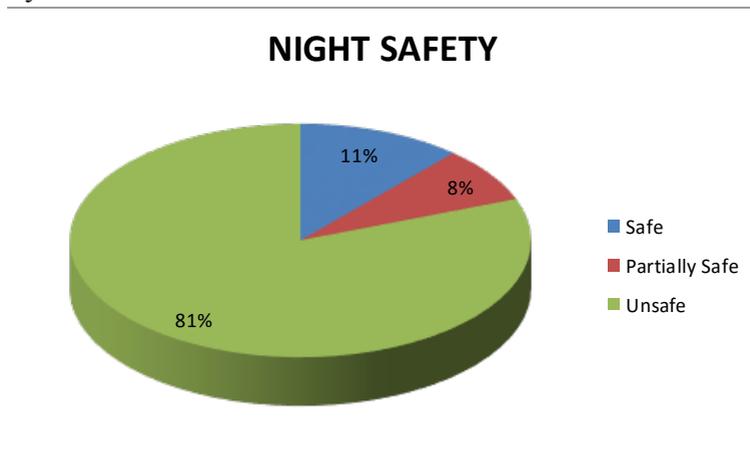
Figure 4.4

Day	Safe	15
	Partially safe	4
	Unsafe	7
Night	Safe	3
	Partially Safe	2
	Unsafe	21



Source: Field Survey 2016

During the day, 58% of the total open spaces considered were considered safe by the users, 15% were considered to be partially safe while 27% were considered not safe and attracted very few users.



Source: Field Survey 2016

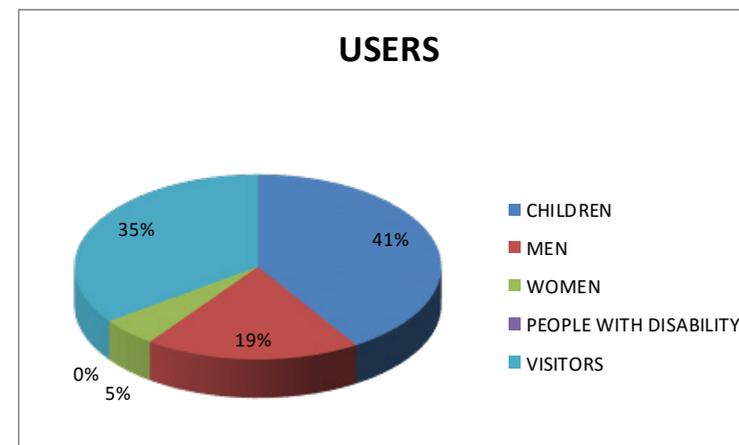
During the night, 81% of the spaces were considered not safe mainly due to lack of lighting and the level of crimes they attracted. 8% were considered to be partially safe while only 11% were considered safe.

4.5 Types of Users

The types of users were determined in order to analyze the ability of the open spaces to be accommodating to all types of users in equal measure.

Figure 4.5

PARAMETER	USER	MAGNITUDE
	CHILDREN	41
	MEN	19
	WOMEN	5
	PEOPLE WITH DISABILITY	0
	VISITORS	35



Source: Field Survey 2016

Of the public spaces considered a majority of the resident users were children at 41%, 19% were men, 5% were women while people with disability were at 0%. 35% of the users were visitors.

5.0 Conclusions

The main objective of this paper was to analyze the level of incorporation of open spaces in real estate developments, using the Kasarani area of Nairobi as the case study, with a view of recommending appropriate means of incorporation of open spaces in real estate developments.

The study revealed that a majority of real estate developments within the Kasarani area have not taken into consideration the provision of open spaces to their residents. While some of the available open spaces have a level of maintenance, security and fitness for use, the majority are largely unmaintained, insecure, not fit for use and short of facilities that would qualify them as indiscriminate to the different types of users. Most of them have been converted into dumping sites or car parks by day and mugging sites by night. Children and adults have resulted to using roads as substitutes for open spaces. However, it was observed that gated estates have taken steps in providing open spaces for their residents though they remain unmaintained. The study observed that the residents were unaware of the role of the available public spaces in their lives and thus made no use of them and this makes them prone to grabbing. The conservation of these spaces has also not been prioritized with no conservation techniques in place. This has been characterized by widespread waste dumping and growth of shrubs on most of the spaces. The neighborhood open spaces identified lacked symbolic elements or specific identifications making it difficult to relate them with specific residential developments hence contributing to the poor management and conservation of the spaces.

Further the research established that the legal and institutional frameworks are inadequate and need to be reviewed. This is in order to ensure that the incorporation is made mandatory.

6.0 RECOMMENDATIONS

Based on the above findings, the paper recommends:

The National Planning and Building Authority of Kenya should ensure the incorporation of open spaces in residential developments in the particulars for building approvals in the Planning and Building Regulations of 2009. This provision should be implemented and enforced through payment of hefty penalties by those who violate them.

Development control should be undertaken through;

Harmonization of the institutional framework of the Ministry of Lands and Physical Planning and the Ministry of Transport, Infrastructure, Housing and Urban Development in Kenya to ensure coordination with regards to planning and development.

Adoption of the cluster zoning, conservation oriented method, to allow for retention of the already existing open spaces. This is through concentrating of developments in specific portions of land while retaining the rest of the portions as open public spaces.

Adoption of the transfer of development rights program as an incentive base by the government. This can be implemented through the sale of development rights to the government by land owners. The government will then focus on conserving the areas.

The adoption of community based management approach through the formation of community based associations. This will be through the development of an outreach program to sensitize people on the value of open public spaces. For the community to take up the responsibility of managing, conserving and defending against grabbers they must attach value to these spaces.

The adoption of better open space designs that reflect the image and identity of the people, that have the necessary amenities such as lighting, that allow flexibility of use and are easily accessible. The design should also incorporate a management plan that will ensure safety and optimum use of the open spaces.

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