

Urban Open Spaces Sustainability

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Abstract

This paper talks about the urban Open Spaces Sustainability. Urban open spaces are very significant and have a great social, economic and environmental impact on our towns and cities. Their nature, quality, disposition, shape and divergence directly affect the development or, contrarily, the degradation of the urban environment, thereby directly effecting quality of life and the disposition of urban dwellers to identify with their surroundings and built environment. Open spaces also play an important role in the sustainable development of urban areas, cities.

Urban open spaces as an essential element can be a notable part of sustainable development. Developments of urban open spaces need to be considered multidisciplinary and integral approaches such as economic, social, cultural, environmental, planning and management issues to improve existing urban open spaces' facilities, services, and also the urban open space policies and regulations.

By selecting different sites, the effort is to identify locally and globally acceptable and applicable characteristics of urban open spaces, having historical, economic, ecological, and social context. An effort is also to signify their expeditious effect on sustainable urban development and quality of life in cities. The results will accord to the betterment of the notions of sustainable urban development and urban open spaces sustainability.

Keywords: Urban open spaces, sustainable development, open spaces Sustainability.

1. Introduction

With increasing population in the urban areas the existence and sustainability of the urban open spaces has become debatable. The shrinking open spaces and rising dwellers density in cities has immensely affected the importance and sustainability of urban open spaces. The socioeconomic and ecological changes in the cities in the entire world has become the major reason behind the new vision of creating public realms, upgrading and improving the environmental surroundings of people living in urban areas, with an aim of minimizing the adverse impact of unlivable environment of cities. A large attempt is been made by the policy makers, town planners, architects, socioeconomic experts, environmentalists to encourage the stakeholders and ensure their role in improving and making sustainable the urban open spaces. In some examples like New York high line the role of local stakeholders and their coordination with the local authorities was responsible for creation of this excellent public realm.

2. Research background

Urban open spaces are the most important element of the urban environment and its ecosystem. The social and economic bonding holds together the stakeholders or the urban population who are directly affected by these urban open spaces and public realms. Moreover these spaces are equally responsible for sustainable urban development. The existence of urban open spaces and making it sustainable is a step ahead towards sustainable urban development. The existence and sustainability of urban open spaces has a direct impact on the development of urban ecosystem and its non existence is responsible for degradation of urban environment. The active participation of stakeholders directly has an impact on sustainable development of urban open spaces, which in return upgrades the well being, health, social, Economic and ecological standards of the urban settlements. Therefore urban open spaces sustainability plays an unprecedented part in the sustainable development of cities.

The urban open spaces also provide urban environment a distinctive identity and characters like nodes, edges, landmarks and also help reducing pollution in cities. The experiments by environment agencies (Environmental Planning Collaborative Ahmadabad) have proven the effectiveness of sustainable urban open in removing pollutants from the air. Retention of rainwater, reduction of noise pollution, and regulation of air temperature are other functions of urban greenery in urban open spaces which improve quality of life in the cities. Greening of urban open spaces can reduce air pollutants directly when dust and smoke particles are trapped by vegetation.

Researches (Indian pollution control association) have shown that in average, 85% of air pollution in a urban open park can be filtered.

In terms of social sustainability, People satisfy most of their recreational needs within the locality where they live. Study show that major population around the world's population live in urban areas, and thus urban open spaces within urban areas provide a sustainable proportion of the total outdoor leisure opportunities. A study conducted in Helsinki, Finland, indicated that nearly all (97%) city residents participate in some outdoor recreation during the year. Most of the dwellers visit public open spaces on a daily basis or almost on routine basis. Urban open spaces serve as a place for relaxation; provide emotional touch and warmth. In Ahmadabad at Sabarmati river front, the promenade located along river at two levels, upper and lower promenades and strategic locations of Ghats draws up to millions of visitors a week who enjoy a diverse range of recreational activities.

An example of renewal in a post-industrial area in Brooklyn demonstrates a consciously creative approach to the development of sustainable urban open space. Middle-class inhabitants of the Green point neighborhood formed the Newton Creek Alliance, named after one of the most polluted industrial sites in the US. Their goal was to improve the quality of open spaces without destroying the industrial spirit of the neighborhood. Using a "just green enough" strategy, the Alliance was able to make a stand against developers and prevent another case of environmental degradation.

An example of renewal in which significant investment in sustainable development of urban open space has played a major role in the gradual renewal of a post-industrial open space is that of the New York High Line. A campaign initiated by two local men, J. David and R. Hammond, successfully closed the intended demolition of the non functioning railway construction and led to the creation of a dynamic open space as Public Park with a decidedly industrial articulation. However, in this case developers took over, and with the construction of luxury high-rise buildings in the immediate locality, middle- and lower-income residents were been steadily pushed out of the area.

1. Hypotheses

The research gains from the hypothesis that sustainable urban open spaces can be recognized as areas within realms of possibility of eminence and exclusive significance. As such, these spaces can be distinguished, and their impact on sustainable urban development can be assessed by means of various measures. By examining trends and perceived worth, we will be able to create models of development, which can be used to positively impact the quality of real spaces in cities from the standpoint of sustainable development. We likewise expect the results of the research to contribute to the development of workable theories of sustainable development of urban open spaces.

2. Methodology

The research is based on the study of few examples of urban open spaces for which locally and universally applicable characteristics are been resolved, associated socioeconomically, historically and with environmental prospective. It is also aimed to show the immediate effect of these characteristics on sustainable urban development and quality of life. The reframing projects, which will become the focus of the study, will provide with motivational image of the transformation of urban open spaces in cities while allowing drawing conclusions usually applicable to other cities facing similar issues. The paper also talks about the nature of the sustainable urban open spaces with the aim of identifying the significant characteristics that influence quality of life as well as sustainable urban development. The fundamental measure of the research has been to outline the very concept of urban open spaces sustainability.

3. Urban Open Space

For the aim of the research, urban Open Space has been defined as external areas, primitively of natural character, which are located between or along buildings due to subsequent urbanization of the area. As part of the urban landscape, such spaces have a significant impact on the quality of life of urban population.

Urban Open Space is also defined as space within a built-up urban area, situated among primarily residential buildings or in their immediate vicinity, with a maximum built-up area of ten percent within the boundaries of the space itself. A meadow, a park, or similar green spaces may also constitute an Open Space. The definition also includes areas in the transitional zone between residential buildings and the area in their immediate vicinity made

up of small front lawns, gardens, and courtyards, as well as green areas utilized for informal markets, recreational activities, and night life (Alexander et al., 1977; Gehl, 2013). Urban open spaces are places of progressive cultural creation, tempting to the eye, with a wealth of detail. At the same time, open spaces can be public, semi-private, or private in character, both from the perspective of ownership and that of accessibility.

Characteristics of urban Open Space in terms of social sustainability

In its broadest sense, social sustainability can be explained in relation to the number of visitors to a particular place whether from different demographic groups or the predominant population. Where visitors are lacking, decline is inevitable. In a narrower sense, social sustainability can be more diverse as it includes gender, age, income, and ethnicity. With increasing diversity, however, comes the potential for conflict. Conflict leads to security issues making personal security another important indicator of sustainability. Additional characteristics relating an area A to neighboring buildings (areas B and C) are ownership, spaciousness, and condition of facilities. These factors especially influence how public spaces are used by providing space for activities for which the surrounding dwellings are not suitably equipped. The social sustainability will give comprehensive approach to the development of the sustainable urban open spaces and sustainable development.

Characteristics of urban Open Space in terms of economic sustainability

Case studies in New York City (specifically the High Line and Bryant Park) will provide the foundation for studying the various manifestations of economic sustainability, especially as it relates to a rise in property values, which is often connected with the recovery of public spaces. Also of interest is the question of funds for the continued maintenance of regenerated areas.

Economic sustainability is basically a matter of achieving balance. It involves using available resources in a way that allows a system to continue to operate effectively over a period of time. The vast majority of renewal projects begin with the idea of improving an existing area for the benefit of the people who live there. Occasionally a particular project, for its uniqueness or innovative approach to a problem, attracts the attention and capital of “outsiders” (developers and investors, for example). At first this may seem like a positive development; however, the weight of the outside investment gradually changes the economic balance of the area, eventually leading to gentrification sometimes called ecological gentrification. In such cases, the regeneration process has not led to economic sustainability of the original community.

Economic sustainability is relevant not only in the initial stages of regeneration but also in relation to maintenance or upkeep of the regenerated area. An interesting example is Bryant Park. Much of the park's history has comprised cycles of decline and subsequent regeneration. For this reason the current management (Bryant Park Corporation, a nonprofit private management company) has chosen to find ways to generate revenue for continued upkeep from the park's cultural offerings in an effort to maintain economic sustainability.

Characteristics of Open Space in terms of ecological sustainability

Urban open spaces provide adequate green areas for physical activity and so contribute to the health of the urban population. As part of the urban ecosystem, they also make a significant contribution to safeguarding biodiversity. A number of cities are initiating programs to support the creation of parks with the aim of rejuvenating neighborhoods burdened by brown fields and unused transportation infrastructure. When greening leads to gentrification, as we mentioned earlier, the very people who were meant to benefit are instead forced out of the area. It is therefore imperative that urban planners, architects, and ecologists continue to search for new strategies which will establish a balance between ecological and social sustainability (Wolch et al., 2014).

Internal and external characteristics of sustainable urban Open Space

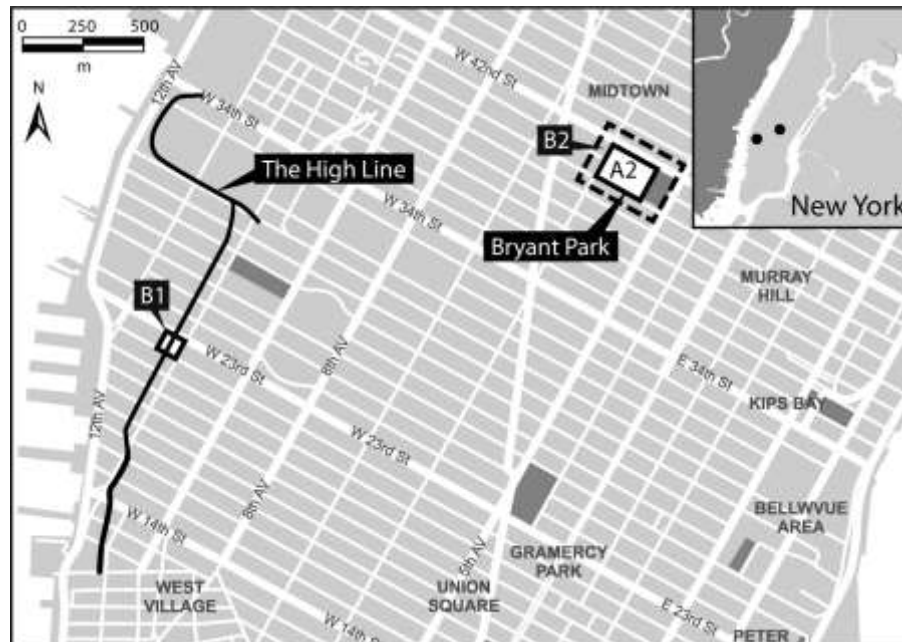
The following are included in the set of external parameters: location (with respect to population, with respect to residence), description of the city (urban structure, average building height, architectural quality, condition of buildings), and functional context (interactions, precedence of personal vehicles, public transportation connections).

Internal parameters include: space (size, boundaries, shape, and condition) and facilities (proportion of vegetation, number of trees, area covered by water, proportion of parking spaces, services for personal vehicles, play areas, public facilities, lighting, small buildings and artwork, advertising). Internal parameters influence factors such as appearance of the surroundings and the environmental quality, ease of orientation, visibility, security, and social controls. They also influence the utilization of open spaces and their subsequent maintenance.

Case studies

New York City, USA, Manhattan, the High Line and Bryant Park

The following are examples of city parks that emerged from the regeneration of previously neglected areas. The High Line and Bryant Park are both located in the Midtown Manhattan neighborhood of New York City, USA.



Location of case study areas in New York City, Midtown Manhattan. Source: author's presentation based on New York Map by dikobraziy/Shutterstock.



New York highline an excellent example sustainable urban open space development

The New York High Line

The High Line is a former elevated freight railway from 1934 that supplied the industrial area of Manhattan's West Side. The closing of the structure in 1980 marked the start of a period of decline and plans for its removal. It was saved from demolition by an ambitious economic plan on the part of local residents J. David and R. Hammond (founders of the organization Friends of the High Line). The plan proposed that the defunct railway be transformed into a new open public space in the form of a linear park. Reconstruction of the 2.4 km structure was carried out in three stages, from 2006 to 2014, according to the winning design proposal, submitted by James Corner Field Operations (project lead), E. Diller, R. Scofidio, Ch. Renfro (designers) and P. Oudolf (planting designer). The realization of the project was overseen by the New York City Economic Development Corporation, in cooperation with the NYC Dept. of Parks and Recreation, the NYC Dept. of City Planning, the

Office of the Mayor, and Friends of the High Line (David & Hammond, n.d.). The organization Friends of the High Line annually raises funds which support more than seventy percent of the park's operating costs.

Today the High Line is an attractive park/promenade, providing spaces for spontaneous theater presentations, secluded meeting places, exhibits, and social activities year round. Like the Charles Bridge in Prague, it entices visitors from all over the world to enjoy its unique atmosphere again and again. Owing to the preservation of the original railway construction and costly investments in its renewal, the High Line has also attracted intense attention from investors around and changed their vision for the sustainable development of public buildings and open spaces redevelopment.

It is not only the magic of the High Line but also the innovative and community-driven approach



that has inspired a growing number of similar projects in other areas of the United States. These derivative projects have also managed to successfully implement the public-private financing partnerships, but what is more, they have re-created the strong involvement of community supporters. The Bryant Park is another example of the sustainable development of urban open spaces.

Bryant Park, June 2011. Photo: Andrew F. Kazmierski / Shutterstock.com.

4. Conclusion

Urban open spaces fulfill many functions in urban context that benefits people's quality of life. Therefore a broad agreement about the significance and value of urban open spaces sustainability in cities towards planning and developing sustainable or eco cities of 21st century. Steadily increasing traffic and urban temperature rise, particularly in the developing countries is not only destructing the environment but also inviting social and economic costs. The ecological benefits bestowed in urban open spaces which range from protecting and maintaining the biodiversity to helping in the mitigation of change cannot be overlooked in today's sustainable planning. Inner-city urban open spaces are especially important for improving air quality through uptake of pollutant gases and particulates which are responsible for respiratory infections. Urban open green spaces help in reduction of the energy costs of cooling buildings effectively. Furthermore, due to their amenity and aesthetic, urban open spaces increase property value. However, the most sought benefits of sustainable urban open spaces in a city are the social and psychological benefits. Urban open spaces, especially public parks and gardens provide resources for relaxation and recreation. Ideally this helps in emotional healing and physical relaxation.

In order to meet social and psychological needs of citizens satisfactorily, urban open spaces in the city should be easily accessible and in adequately optimal in quality and quantity. Urban open spaces need to be equally planned throughout the urban area, and the total area in use by urban open spaces in the city should be big enough to serve the city population needs. Cities are responsible for most of the consumption of the world's resources and are home to most of the world's citizens as well. Bringing urban open space to the urban landscape can promote and inspire a better relationship with the environment while supporting important services. Urban open green space is part of urban ecosystem.

The promotion and conservation of urban open space and its sustainability in cities is in the hands of local and regional authorities. Integrative approach should not be discussed only in writings as a source of contributing instrument to environmental sustainability, but it is also important that how it could be fostered in developing

countries in different social settings in which deferent economic, political and cultural factors influence. And there are many intermediary factors such as lack of investment, proper management, designing an appropriate planning and public policy, and political instability, social values, economic circumstances influence to how and what extent the application of integrative approach in developing countries can contribute to environmental sustainability. Scientific and technological development of a country is both dependent on social context and political. In this regard, integrative research with incorporation of participation from different level stakeholders i.e. academic and non-academic is essential to foster sustainability of urban open spaces development in the context of challenges toward urban open spaces.

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