

Rethinking Adaptive Edges for Accessibility to Urban Green Spaces

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Abstract—Open spaces at urban level including green spaces or parks, are key elements of urban landscapes and urban sustainability. Such spaces not only promote social interaction and good quality life but also recover the quality of the environment. These certainly have a constructive impact on human health. Natural spaces and vegetation have been replaced by hard impervious surfaces in the process of urbanization. As a result, the transition of cities has led to a system of adverse measures in urban ecosystems throughout the globe.

Vacant land which are parcels of urban green spaces can be repurposed for multiple functions which could work as catalysts to improve urban ecosystems. These spaces could be designed to accomplish the requirements as captive urban runoffs, habitat for biodiversity, reduce urban heat island effect or even ease of burden on age-old wastewater systems, etc. Reviewing mostly recent studies, this paper intends to present a critical analysis on the cutting-edge knowledge on improving the scenario by reconsidering the existing urban parcels of land.

Keywords—Green spaces, urbanization, sustainability, ecosystem.

I. INTRODUCTION

The evolution of a city form demands various changes depending on the lifestyle of the population, the structure and organization of the environment. These conversion to urban growth involves irreversible changes, these may demand an increase in area of development for various efficient purposes. A significant change in the characteristics of construction is observed as soon as we limit the territorial constraints. Designed architectural spaces must not only meet the requirements like technology, function, physical, technical, artistic, economic strength etc.; but also understand the demands of future generations. Considering the above aspects, a special role is given to the formation of recreational spaces.

Recently development of cities demands refinement and beautification of public spaces in cities. These are mainly influenced by elements of architecture, city planning and public demand. The contextual relation for these activities is molded by the economic, social and cultural changes taking place in the globalizing world. Open spaces at urban level become valuable, once they are open and accessible to all; this increases the social interaction and exchanges of ideas and values. It is in these places that the ordinary life of city residents takes place; they provide the likelihood for various methods of recreation. If the recreational

spaces in cities are well- thought and with defined functions, they are very well able to connect with the residents both emotionally and rationally.

II. OPEN SPACES

A. *Recreational open spaces*

Defining a recreational space, it can be referred to area required to organize leisure and recreation of the population. Although its functional relativity can differ, they can be creative areas, gathering areas, children's playground or sports grounds. They not only add to the quality of life but also economically benefit to the development of the cities. Apart these needs, such places also demand sense of security and a need for aesthetics. Considering the modern society, the importance of such places is increasing day by day. This can also be the result of limitation of the monetary budget of the active population. It is necessary to document the convenience of various groups of population, such as depending on the age group, people with special abilities or also with limited mobility. The next question arises, the availability of recreational areas responding the users. It is thus necessary to note the scarcity of recreational and leisure area, or even the unexploited recreational spaces. The unsuitable development of public spaces are results of a lack of care for endurance and orientation to the tissue of historical places. It's also observed that these spaces are neglected due to lack of care for aesthetic values, and they are found to be chaotic and unconceivable to the users. Formation of recreational spaces is largely related to a powerful landscaping system. The positive influence of the rejuvenation structure on the quality of life of the population is quite frequently spoken. positivity can be referred to ecological gains as well as aesthetic appeals.

The article aims to evaluate new urban recreational spaces, through the theoretical approximation of issues related to their infrastructure arrangements as well as by showing examples of the phenomena in a few selected spaces. The following approaches are applied in the research: analysis of existing data, record of recreation management, and studies.

B. *Various forms of recreation in Urban open spaces*

Recreational phenomena taking place in recreational areas have a spatial character, which is mainly dominated by leisure time spaces and activities. Recreational spaces evolved out of human needs for

social freedom. They demand geographical and recreational infrastructure for leisure purposes. Thus, any space where social, physical or cultural activities take place are recreational spaces. Tourism spaces (where tourists can be observed) are also recreational spaces.

Therefore, urban recreational spaces can be referred to as any area of city developed for recreational purposes and can be used in leisure time. Urban recreational spaces may include playgrounds, sports fields, areas where cultural, entertainment and social activities take place or also architecture structures like museums, art galleries, theatres, cinemas, clubs, etc. sports and recreation facilities.

C. *Relation of urban design and open spaces*

Landscape areas of public use from fringe to the center that are grouped together as surrounding spaces, semi-urban and urban spaces can be defined as Urban open Spaces. The areas that form the boundary between this periphery and city centers are Semi-urban spaces. It is observed that the major cities are surrounded by industrial development, residence for the workers, farmland, weekend recreational spots etc. This is how urban extension is seen in metropolis cities. As one gets closer to the city center, urban spaces get more crowded and congested and it reflects the culture of urban life. These land parcels may be developed or undeveloped land. These spaces can be termed as private spaces or public spaces depending on the ownership of the property. Spaces run by official or semi-official institutions represent private spaces. Spaces open to the public with defined function and organized for constant use represent public spaces. Public spaces where all events of urban life are set in and which are the physical indicator of said socio-cultural structure within their historic background reflects the urban identity.

Urban public spaces offer a communal service to various groups of a society; specifically, where individuals and groups of different social, cultural, and economic structure, from different sex, ages, and level of education, customs, traditions, and backgrounds are together. Urban planners should aim at studying and providing for the demands of these large user groups. Urban furniture and urban public space at micro scale defines the urban life in the macro scale, which should be a guiding factor to spread lively urban life from core to fringes. Fulfilling the needs of a wider user group is an important task of architects and urban planners. For the formation and sustainability of urban identities the responsibility should be shared.

D. *Open space for leisure*

The real "green lung" in the high-density space of the urban centers is the open space for leisure (Green Space). As a vital landscape area, these spaces not only help in beautification of larger landscapes but also purify the air, prevent sound pollution and improve the microclimate. They also provide

facilities and places for leisure communication, gathering or entertainment for the population in urban centers. Green space parks, green space squares, waterfront greenbelts and water surfaces are included in the green space; they have different characteristics from the general green space.

III. ACCESSIBILITY TO URBAN GREEN SPACES:

It is usually acknowledged to consider landscaping as a compulsory part of the recreation system of urban spaces. The formation of interconnected functional and green areas enhances the process. Green areas can be presented both in the form of design elements and in the traditional form. The territorial resource interconnects to form the development of urban greening systems. Green areas of settlements are divided into suburban intracity and local areas.

Suburban open spaces are located in comparative proximity to the organizational limits of the city. Their main focus is environmental recreation and leisure. Intracity open spaces are meant for meeting the requirements within the regional boundaries of the city. They are eminently identified by their presence in urban development. Such spaces compact and can be divided into groups like general use, aimed at the organization of daily leisure and recreation of the population or special purpose like amusement parks, historical parks, protective zones of industrial enterprises, etc. Local open spaces include areas with limited access to people, for example, in neighborhoods, individual homes, residential areas, pre-school institutions or educational institutions.

Based on the pattern of daily travel, considering the tour and transport mode analysis of accessibility can be done. Statistical analysis of travelling distance is the basis of an adaptive threshold for controlling potential measures of accessibility. Variation in accessibility is also affected by age, gender and also income. The evolving landscape at the periphery of developing cities should be investigated in above terms to increase feasibility of operations. Urban green spaces should be positioned within walking distance of residents, with a minimum size such that it can provide some amenities to users, like a small playground or a terrace. These may include parks of size that can host dynamic recreation for young people and adults. District parks can be placed beyond the walking distance for the potential users. Urban open spaces of such dimensions can overcome the discomfort of taking public transportation or driving there occasionally by analyzing the accessibility study. The study asserts that areas within the city having a suitable access to a park and if they are located within the service area of that park are quite valuable. A service area includes all streets that are accessible from any given point in space considering parameters, such as distance or time, as well as any physical barriers or limitations that may exist and that could limit the accessibility. Green space areas in the densely populated cities of today are valued more

than before while at the same time are suffering shrinkage due to pressures for more lands for housing development.

IV. DESIGN FOR URBAN OPEN SPACES FROM PEOPLE'S PERSPECTIVE:

The proposed layout design should consider standard features for children as well as matured people such as plantation, garden, sitting arrangements, amphitheater or any other recreational elements. They should also include, well designed lighting arrangements, public utility services like toilets, walkway fountains, small scale shops for commercial activities. Guidelines ensuring proper safety and security to be provided.

Increase accessibility: Homes and destinations need to be well- connected, hence provision of proper transport plans to provide safe green routes should be ensured. Avoid use of motorized vehicles at certain points; encourage use of group or public transport. Improved pathways and provision of ample parking areas must be considered.

Increase Legibility: Aesthetic quality of a place and visual landmarks create an image in the user's mind. Thus, it helps the user to reminisce about the actual image. Signages used should be vibrant enough to attract attention. Use of commercial advertisement inside these areas should be avoided.

Stimulate the senses: the senses like touch sound or visuals can be stimulated by providing by use of various textured and colored elements and plants The shape and color of the light can be engendered by three dimensional figures to make the sites more appealing.

Proper maintenance and management: Regular cleanliness, trimming, irrigating the plant, children play field, planting seasonal flowers, security guard, public toilet etc. have to be ensured.

Few more points to consider are changing the paving, choosing the new one by the color to stand out; Installing a modern lighting system; Widening of pedestrian zones; Tree-planting, improving of visual comfort; Reconstruction of bus and tram stops; Development of pedestrian crossings;

Strategies for improvement and preservation of parks and open spaces. The following strategies could be implemented for improvement and preservation of parks and open spaces:

- Primary concern while designing should be user safety.
- Users should get the feeling of openness and security.
- Public work, planning and finance or the business department should act coherently.
- As an important resource for providing a range of opportunities for people of all ages and backgrounds, promotion of cultural benefits of open space should be encouraged.
- Spaces should be inclusive of elements such as gazebo, seating, a foundation or ornamental planting or a garden, pedestrian lighting, shade or other

outdoor art that will attract activities which create outdoor rooms or gathering spaces.

- A master plan can be adopted aiming for open space acquisition; developing a means for funding by creating land trust supporting improvement and preservation of open spaces.
- Upgrade or refurbish park and recreational sites, more established and older neighborhoods for the public as well as encourage timely development of existing parks and open sites.
- Natural resources can be safeguarded by integrating these areas into an open space network.
- To preserve, enhance, and acquire significant natural, cultural, and agricultural areas within the municipality area should Create public-private partnerships and cooperate with landowners.
- Regional open spaces should be easily accessible to all visitors. Development of open spaces should be easily located and accessible.
- Promote activities and comfort for a wide range of people like children, youth and old generation.

V. INFERENCE:

Uncontrolled urbanization in India is the biggest driver of rapid environmental and green space degradation. (Maiti and Agrawal 2005). The urban heat island effect is an effect of rapid green quality squalor, resulting in reduction of energy, health sustainability and its scope and boundaries. Well -planned green spaces are helpful considering the health and social well-being as well as it supports in mitigating the ill-effects of climate change. Thus, the green spaces furnish to each normative layer of sustainable urban expansion. To adopt inclusive growth, it is actually important to preserve and defend the green spaces in the city. It is observed that policy makers lack in identifying the tools to solve resource allocation problems that are associated with urban design. Identification of valuable techniques towards documentation and monitoring of green spaces that are at high risks need to be given importance.

VI. CONCLUSION:

Environmental condition of a town depends on crucial elements like Parks and open spaces. It enhances the positive effect on human health both psychologically and physically. They also help in protection of the resource base of trees, plants, soil air, water, etc. It is also needed to reserve and recover urban concord. This paper has tried to comprehend some design guidelines related to urban design perception and critical analysis from researchers' perspective. It is attempting to identify the gap between user requirements of green spaces and its role in urban design. The designers with the authority should take conscious decisions and responsibility for preserving and enhancing the role of parks and open spaces and to improve existing quality efficiently leading to fulfill cultural,

recreational, and social demand of the general people. This paper could be a valuable effort if it helps to direct the protection of existing parks and open spaces of any urban area, especially urban municipalities and enhance or activate more such spaces emphasizing on public needs.

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