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Development And Utilisation Of Urban Open Spaces In Islamabad

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Abstract: This research work explores the onsite condition of Urban Open Space in the city of Islamabad. Urban Open Spaces play a significant role in the development of a city. These spaces also determine the outlook of the city. The impact of these spaces on the residents/community is immense. Therefore, the Urban Open Spaces should be planned to ensure the safety and satisfaction of the public. These places are used for plantation, landscaping, and decoration of a city and when left unplanned, these can encourage criminal activities. This study explores whether these spaces are planned and developed according to the planning parameters prevailing worldwideThese, in turn, help define the efficiency of parks and open spaces in terms of the requirements of Islamabad citizens. For this purpose, the Urban Open Spaces of two residential sectors were selected. The research concludes that the elements of Urban Open Spaces in two residential sectors require detailed treatment. Currently, city management is not emphasising the importance of planning, preserving, and managing Urban Open Spaces in the residential sectors of Islamabad.

Keywords: Urban Open Spaces, Master plan, Green belts, Parks

INTRODUCTION

A city is comprised of many components such as residential, commercial, industrial and urban open spaces. These components are planned to view a specific region's social, cultural, economic, topographical and geographical aspects. An environment-friendly and livable city results from proper planning and detailing these aspects (Oden, 2008). Among the mentioned components, urban open spaces are termed as lungs of a city. Their presence is significant for the physical and mental well-being of the residents (Loures, 2007). Therefore, it is appropriate to say that management of urban open spaces is vital because if they are left unattended, their character makes them prone to be converted into hazardous places. In third world countries, these spaces are rapidly converting into slum settlements where living conditions are not adequate, thus destroying the overall environment and vista of the cities (Population Distribution, Urbanization, Internal Migration and Development: An International Perspective, 2011).

Urban open spaces (Open spaces and parks) play a significant role in developing a city (Williams, 2000). The parks must be planned to ensure safety and satisfaction of the public (Report of the Parks and Open Spaces Scrutiny Panel, 2005). The direct users are those who visit parks for physical activities, relaxation and to play sports. Indirect users are people who do not interact with these places physically. However, the environmental impact of these spaces, including visual and climatic impact, affects them (Theocharis Tsoutsosa, 2005). Therefore, the condition and development pattern of urban open spaces in Islamabad, which are essential features of this city, should be studied to explore whether these spaces are efficient enough to cater for the needs of the citizen and the environment of Islamabad.

Islamabad is a planned capital city of Pakistan with a broader concept of Master Planning proposed by C.A Doxiadis in 1960, subsequently organised, managed and developed by Capital Development Authority (Zahidi, 2000) aesthetically beautiful due to its natural landscape and continuously undulating terrain. This physical feature is fully respected while conceiving the overall Master Plan of Islamabad, resulting in a noticeable amount of urban open spaces, including parks, open areas along natural streams, and green belts within main roads. Parks in Islamabad are designated, considering the needs of the residential sector, open spaces along natural streams are left due to their challenging topography and greenbelts are planned to separate the traffic movement on main roads. This indicates that these spaces have an important role in determining the outlook of a city. They also enhance the contentment of citizens through providing physical and mental recreation.

Islamabad is a metropolitan area that usually comprises multiple jurisdictions and municipalities, neighborhoods, townships, cities, exurbs, counties. The principal system of axes in the metropolitan area of

Islamabad defines three distinctive areas (Doxiadis, 1962). The cities of Islamabad and Rawalpindi developed as twin cities serving each other in complementary ways. The planner of Islamabad, Doxiadis (1967) follows his theory of Ekistics, which states that all the three areas, the natural, the agricultural, and the urban, form the universal city that is environmentally sustainable (Aryal, 2010). The theory of Ekistics as explained and defined by Papaioannou (n.d.) comprises five elements: nature, man, society shells (structures), and networks. This hierarchical concept stresses that open spaces, at a given hierarchical level, must be considered as "interrelated" among them to form one unit in the next higher hierarchical level. Such interconnection may be either "real" (physical) or "functional" (conceptual). The capital city of Islamabad was conceived in the ear when many new capitals were erected. This was in the middle of the 20th century (Rawat, 2005). Sajida (2006) summarised the history of Islamabad from the original report of the Master Plan prepared by Doxadise and narrated that there were many reasons for which Pakistan needed a new capital city. Doxiadis Associates prepared several reports covering all facets of the problems related to creating the new Capital of Islamabad. After a careful study of these, the present area was selected. The nearby existing city of Rawalpindi perceived to offer Islamabad considerable aid in facilities and initial housing needs (Doxiadis,1962).

1. Open Spaces of residential sectors

According to the Master plan of Islamabad, the urban area has only those open spaces which are necessary (Doxiadis, 1962). The Master Plan of two sectors indicates that there are open spaces other than parks provided due to (a) Natural topography or natural streams (b) Along main roads in the form of green belts. The same is indicated in the Master Plan of Islamabad as "the community layout plan from groups of small masses separated from each other by free surface area which are either part of functional needs or is imposed by the landscape such as ravines. If the layout of free spaces is suitably oriented and if their planting is made following the object in view, then the improvement of microclimate in the built-up area is assured" (Doxiadis, 1962). The green belts are open spaces that fall into the functional open space. The open spaces along natural streams are imposed open areas.

Three natural streams are passing through Sector F-6. The most extended stream measuring 1.1 miles passes from sub-sectors F-6/1 and F-6/2. The second stream is passing through sub-sectors F-6/2 and is 0.28 miles long. This stream is branched into two parts. The third stream is 0.3 miles long and is passing through F-6/4. Likewise, three natural streams are passing through sector F-11. The most extended stream is 1.27 miles passing from sub-sector F-11/1 and F-11/2. The second stream is passing through sub-sectors F-11/3, and F-11/4 is 1.18 miles long. The third stream is passing through sector F-11/1, and it is 0.65 miles long.

According to the Master Plan of Islamabad," the direction of roads and walkways combined with the open spaces offer possibilities for good ventilation. Road construction combined with green areas must be designed in relation to climate" (Doxiadis, 1962). Sector F-6 has a civic center in the south and Margalla Hill National Park Area in the north, in the west of the sector 7th Avenue is crossing which is part of F-7. Therefore, only the eastern green belt is selected for observation. The selected Green belts for observation are the eastern and northern greenbelt. In west, the acquisition process for the development of the main road has not yet been done by CDA and only service road is constructed, in the south Nizam-ud-din road is passing and greenbelt is protected with natural vegetation, which is part of Sector G-11. As open spaces are considered lungs of the cities and their efficiency contributes significantly to improving residential and other aspects of city life. However, limited efforts have been made to improve the situation of open spaces and the provision of adequate facilities in the neighborhood parks and open spaces in Islamabad. Therefore, this research aims to evaluate the user efficiency of parks located in the residential sectors of Islamabad. This research work determined the onsite condition of urban open spaces in Islamabad, one of the important components of the Master Plan of Islamabad. Previously hardly any research is carried out in this context; therefore, it will open new avenues for researchers

2. Methodology

3.1 Study Area

The city of Islamabad consists of five zones, each with different features and land use pattern. The selected study area falls in the residential F series of Zone I, designated as the urban area of Islamabad. The Urban area (Zone I) consists of 72 Sectors. The residential series F spread from F-6 to F-8 and the F-8 to F-14 comprising eight sectors out of which five are entirely developed. This research thesis evaluates the Parks and open space of two Sectors F-6 and F-11. The reason for selecting these two sectors was their similar town planning concepts. Secondly, sector F-6 was the first sector which C.A Doxiadis Associates planned during the development of the Master Plan of Islamabad city in 1961 and sector F-11 was planned in 1986 and executed in 1990 by the CDA on concept given by C.A Doxiadis.

The data was collected from the field using a checklist based on thirteen parameters. The parameters were selected through a literature review of relevant journal articles, reports of municipalities and development departments. No comprehensive policy document about the development of open spaces was found from

Capital Development Authority. However, park development standards were described randomly in various documents. Following are the details of parameters used in the research.

i.	Availability and quality of Fence
ii.	Availability and quality of Tracks/Trails
iii.	Separate sitting places for adults
iv.	Children play kit (age 2-12)
v.	Children play kit (age 13-17)
vi.	Provision for artificial light in parks
vii.	Provision of Food items/stalls
viii.	Availability and quality of Shades
ix.	Availability and quality of Drinking water
x.	Availability and quality of Toilets/Change Room
xi.	Availability and quality of Parking Facilities
xii.	Availability and quality of facilities for People with disabilities
xiii.	Proper Signage of the Park

Besides, physical field survey, 35 experts were interviewed face to face to get their recommendations for the improvement of open space to enhance the livability of these sectors.

3.2 Results and Discussion

Sector F-6 is located at the foot of Margalla Hills and designed by Doxiadis Associates. The concept of this sector is to cater for the residential need of Islamabad. It is divided into four sub-sectors. The sub-sector F-6/1 and F-6/4 face the Main Civic Commercial Centre (Figure 1). This sector is designed for the high-income class, with a fifteen thousand to twenty thousand population. There are four planned parks in Sector F-6. One planned park is located in the F-6/2 sub-sector, which is still not developed. There are ten parks planned adjacent to residential plots in sub-sector F-6/3, and one park is planned along with School. Currently, four parks are planned, and the remaining six are not developed into a public facility, and the land is vacant.

Designated parks of sector F-6

Designated parks of sector F-11

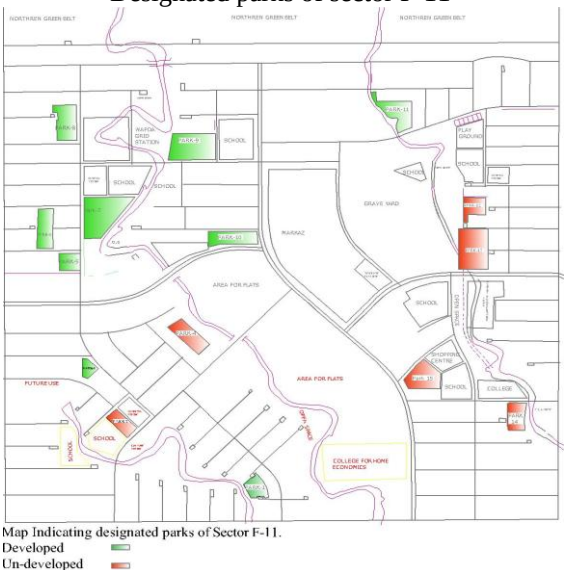

Fig.1:Location map of parks

Sector F-11 is surrounded by residential sectors E-11 in the north, G-11in the south, F-10 in the east and F-12 in the west. CDA planned it in the year 1985. The concept of the sector is to cater for the residential need of Islamabad. The sector is comprised of four sub-sector. The sub-sectors F-11/1 and F-11/4 face Main Nazim-ud-Din-Road and F-11/2 and F-11/3 face Margalla Road. It is planned for the high-income group with a population of twenty-five thousand to forty thousand persons. High Rise apartments are also planned in sub-sector F-11/1. Another prominent feature of this sector is the small Naval Colony allotted to Pakistan Navy which has its distinct boundary. There are four planned parks in sector F-11/1. There are six planned parks and four

playgrounds in this sub-sector. Three parks are planned in sub-sector F-11/3. There are two parks planned in this sub-sector (Table 1).

Table 1. Development status of designated parks in Sector F-6 and F-11

Sector F-6		**Sector F-11**	
Developed parks	**Undeveloped parks**	**Developed parks**	**Undeveloped parks**
Park 1: Location: F-6/1 on Nazim-ud-Din Road and Ground	Park 4: Location: F-6/2 adjacent to Khyaban-e-Margalla and Plot No 45	Park 1: Location: F-11/1 adjacent to Street No 79 and Street No 78.	Park 2: Location: F-11/1 adjacent to Street No 73 and in the center of primary School and Shopping Centre.
Park 2: Location: F-6/1 adjacent to Street No. 38.	Park 5: Location: F-6/2 adjacent to Khyaban-e-Margalla and Plot No 145.	Park 3: Location: F-11/1 adjacent to Street No 5.	Park 4: Location: F-11/1 behind area for flats.
Park 3: Location: F-6/1 adjacent to Street No. 32.	Park 6: Location: F-6/3 adjacent to Street No 7.	Park 5: Location: F-11/2 adjacent to Street No 15	Park 12: Location: F-11/3 at the end of Street No 50.
Park 8: Location: F-6/3 adjacent to Street No 1.	Park 7: Location: F-6/3 on Main Double Road.	Park 6: Location: F-11/2 adjacent to Street No 18.	Park 13: Location: F-11/3 adjacent to Street No 52.
Park 11: Location: F-6/3 adjacent to Street No 10.	Park 9: Location: F-6/3 adjacent to Hill Road.	Park 7: Location: F-11/2 adjacent to Street No 24.	Park 14: Location: F-11/4 adjacent to Street No 58.
Park 12: Location: F-6/3 at the end of Street No 10	Park 10: Location: F-6/3 adjacent to Street No 10.	Park 8: Location: F-11/2 adjacent to Street No 24.	Park 15: Location: F-11/4 adjacent to Main Road.
Park 14: Location: F-6/3 on 6th Avenue East.	Park 13: Location: F-6/3 adjacent to Street No 2	Park 9: Location: F-11/2 adjacent to Street No 20.	
	Park 15: Location: F-6/4.	Park 10: Location: F-11/2 adjacent to Street No 34.	
	Park 16: Location: F-6/1 on Nazim-ud-Din Road and Ground Road.	Park 11: Location: F-11/3 adjacent to Street No 39.	
7 Developed	**9 Undeveloped**	**9 Developed**	**6 Undeveloped**

Table 1 indicates that the percentage of developed parks in sector F-6 is less than in sector F-11. The comparison shows that the responsible department is not putting much effort to deliver community benefits. As discussed earlier, the reason for this negligence is that Capital Development Authority is more focused on improving the overall outlook of this city. The will to provide community facilities to the citizen is lacking. Even after more than fifty years of development, there is still no improvement in the motivation to cater to the citizens' needs, which was a basic concept behind the Master Plan of this city.

Moreover, the critical review of the Master Plan of the sector F-6 also indicate that plots provided in this residential sector are large, mostly between 1000 to 2000 yards with permissible construction area is minimum (CDA Regulation 1992). These plots have large lawns. The residents of this sector prefer to utilise their houses for recreation. On the other hand, the layout plan of sector F-11 reveals that plots with a much smaller area

(between 400 to 600 yards) and covered area of the house or constructed portion are more compared to sector F-6. Residents of this sector peruse city management to provide recreation facilities. The provision of private apartments in sector F-11 also an influencing factor because the large population resides in high-rise apartments. All over the world, there are standard parameters defined by the management of cities for designing parks. These standards ensure that the community for which park is designed to get maximum satisfaction when using that facility. The Master Plan of Islamabad has its basis in the satisfaction of humans and communities; therefore, designing and planning every single unit of Islamabad theme of Ekistics is felt by the observer. Contrary to this, the analysis of community parks of two sectors indicates otherwise.

Table 2 Availability of public facilities in Parks

Parameters	Sector F-6 (7 Developed Parks)		Sector F-11(9 Developed Parks)	
	Provided	Not Provided	Provided	Not Provided
Fence	5	2	8	1
Tracks/Trails	6	1	9	0
Separate sitting places for adults	7	o	9	0
On Main Road	2	5	1	8
On Residential Streets	5	2	8	1
Children play kit (age 2-12)	6	1	8	1
Children play kit (age 13-17)	1	6	1	8
Provision for artificial light	1	6	3	6
Food items	1	6	0	9
Shades	6	1	6	3
Drinking water	1	6	0	9
Toilets/Change Room	0	7	0	9
Parking Facilities	1	6	1	8
Provisions for Disables	0	7	0	9
Proper Signage of the Park	5	2	8	1

The analysis results of the field survey of developed parks in two residential sectors reveal that seven parameters have not provided in all developed parks of both sectors. These parameters are (a) provision of play equipment for children of different age groups (b) facility of artificial lighting (c) facility of drinking water (d) facility of changing room/toilet (e) facilitation for disabled (g) parking facility (e) provision of food items. This also indicates no standard developed in Islamabad for designing parks (Table 2).

Fence integrating public safety and use into planning urban, greenways a study conducted in the USA by Luymes and Tamminga (1995) summarize that the parks are appropriately fenced to prohibit the entrance of unwanted intruders. The availability of fences ensures the public's safety using the park, especially parents who feel secure for their children to play in the park. Tracks/trails provided in parks make them convenient for walkers, as defined by Luymes & Tamminga (1995). The presence of tracks/trails in designing and developing a community park is also significant because this will promote physical activity. People of all ages refrain from walking along roads if tracks/trails are available in community parks. Gloxinia and Thompson (2009), in their study on the emerging relationship between design and use of park spaces, emphasised the age-appropriate allocation of the park. This creates user convenience and makes parks and open spaces more functional for all age groups.

Moreover, the entry/exit point on the main road must be prohibited to avoid accidents. This is used as the Bellevue Park and Community Services standard, Adopted by Bellevue City Council (2003). The city of Islamabad's layout plan is designed so that high-speed traffic is on double main roads and the median separates the opposite moving traffic. On the other hand, streets intended for slow traffic with a speed limit of 40 kilometres per hour. This is for the safety of park users that entrance and exit points must be provided on streets instead of main roads. The Placement of Children plays kit within a park are essential for the free movement of children. The kids also enjoy playing with other kids of their age. The provision of an artificial lighting system ensures that the public can visit parks in the evening (after sunset) and reduce criminal activities as narrated in Park Design Guidelines and Data (1996). Food Items available for children in particular and elders in general, as Gloxinia & Thompson (2009) mentioned. The visiting public parks, especially older people and families, enjoy snacks as a part of relaxation and entertainment. The provision of small stalls within the park area facilitates the users. Burke et al. (2009) argue that seating arrangements with shades and canopies are essential in parks for protection from the elements of nature. Shades in parks of Islamabad are necessary because in summers temperature in the city of Islamabad rise to 45 degrees and strong sunshine make parks without shades inconvenient for users. Safe drinking water is a vital feature to facilitate the public, especially those who

perform physical exercise. Toilet provision and change rooms along playgrounds are other essential feature of parks.

Parking Facilities provision along the boundary of playgrounds where people come from a distant part of the residential sector. Children above five years of age usually ride on bicycles and require the spaces to stand their bikes securely. Provisions for the public with disabilities must be provided for disabled people. Burke et al. (2009), in the research conducted on parks of Karachi, also suggest that special persons need our special attention, much more than normal people. In parks, special arrangements of slopes for their vehicles or for climbing protected ropeways for walking etc. should be provided. Byrne and Sipe (2010) mentioned that proper signage of the park defines that the specific use of park/playground must be defined and displayed. The signage will display the location and guide users to visit the park depending on their requirements. It also prohibits unwanted visitors to came and site in family places.

3.3 Open spaces and green belts along natural streams of sector

Survey of Natural streams flowing through two residential sectors indicates a high percentage of negative use of open space along natural streams. In sector F-6, an illegal settlement exists which is developed along the bed of natural stream flowing through sub-sectors F-6/1 and F-6/2 to reduce the impact of this settlement on the surroundings boundary wall is constructed. Although in sector F-11, no illegal residential settlement exists, which is an achievement for the management of Islamabad's city, the percentage of negative use as indicated is not controlled over the years. The photographic survey of F-11 shows that open spaces along natural streams of F-11 have utilized as dumping places for construction waste and small illegal shelters for construction workers are present at some points. The above analysis shows that open area along natural streams of Islamabad, especially in residential sectors, need a proper preservation plan; otherwise, it will cause a nuisance for the public residing in the vicinity. These areas have the potential for negative use, as clearly indicated by analyzing natural streams in both sectors. The comparison and analysis of green belts in two residential sectors show that these spaces are not utilised negatively to a more significant extent. This is because these green belts are located along main roads and constantly viewed by the public. Therefore, human contamination of these areas is restricted due to their location. However, this also generates the impression that the focus of city management is to protect and decorate the spaces that have some visual impact. This is contrary to the theme of Ekistics, which has emphasised on facilitating even a single unit of the city.

3. CONCLUSIONS AND RECOMMENDATIONS

This research reveals that most of the essential facilities for user-efficient parks are absent from parks of two residential sectors (F-6 & F-11). Although spaces have allocated within residential sectors of Islamabad for community parks, many community parks have not developed yet. The development of parks from F-6 to F-11 has increased, but user efficiency parameters have ignored. This study concludes that basic parameters that play a significant role in social fabric by providing recreational opportunities to the community are grossly inadequate. The green belts within the right of way of roads are well protected and organised as per their designated use in the master plan. Open spaces along natural streams of two Islamabad sectors have been utilised for purposes that alter their characteristic. The development of Kachiabadi and dumping sites along natural stream indicates that open spaces along natural streams in these sectors are also subjective to abuse. These spaces are mainly utilised for dumping sites for construction waste. The open spaces along natural streams of two residential sectors are left in a naive form, resulting in illegal utilisation.

Around the world, municipalities and departments responsible for developing a city emphasise the formulation of basic parameters or standards to design parks. These parameters and standards are formulated after consultation with residents and professionals. Therefore, city managers of Islamabad must also look at this aspect of planning. Thirteen researched parameters may be considered a starting point towards adapting this modern technique for efficient facility development. Capital Development Authority (CDA) is responsible for the development, maintenance, and upkeep of the city and ensuring the provision of the best possible civic amenities and facilities for the citizen of Islamabad. However, the development pattern adopted by CDA is a hurdle in the provision of such facilities (Zahidi, 2000).

Although many NGOs, voluntary organizations, and citizens committees are working for environmental protection/conservation in the city, there is no participatory process between them and the local government agencies. This lack of inter-institutional cooperation has inhabited the capacity of the city to manage its environment. To further look into this aspect, critical re-examination of these approaches is required.

The Capital Development Authority should formulate comprehensive policy and standards for the designing of parks. Open spaces along natural streams may be converted into camping and picnic spots to improve the city's outlook and control illegal activities in abounded open spaces.

For this purpose, there is a need to conduct more research to identify determining factors contributing to well-developed and user-efficient open spaces. It is necessary to consider new approaches for conserving natural

resources, environmental health and quality of life in this city. The planned development can become more meaningful if new methods are adopted to manage the urban environment in Islamabad.

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