

URBAN GREEN SPACE: AN APPROACH TO SUSTAINABLE ENVIRONMENT

Faizan Ali¹, Mohd Imran², Mohd Sajid³,

Jishan Ahmad⁴, Mahesh Kumar⁵

Department Of Civil Engineering,

IIMT College Of Engineering, Gr. Noida, U.P(India)

ABSTRACT

This paper explains the benefit and need of “urban green space”. The important role played by urban green space are social, economic, cultural and environmental aspects of sustainable development. Urban green space can be a comprehensive tool for long term protection of environment sustainability through improving quality of life and air quality, increasing property value due to amenity and aesthetic characteristics and reducing the energy cost of cooling building. Urban green space can also be effective for traveler and health to tourism and can be proved as a factor of economic boom. To make sure multiple benefits and roles played by urban green space. Certain development with in urban area in content of green infrastructure should be done and incorporated effectively into urban environment sustainability agenda. To do this integrative vision including planning, monitoring, designing, maintaining of urban green space required in cities all over the world.

Keywords: Socioeconomic value, Sustainable environment, Urban green space, Integrative approach.

I.INTRODUCTION

Urban green space is an important contribution can be significant part of sustainable development. The definition of urban green space which is agreed on by ecologist and social scientist is public space as well as private space in urban areas primarily covered by vegetation which are directly or indirectly available for users. Irrespective of level of development of any country, many countries are facing one of the most important challenge: The adequate development of sustainable cities. Since now half of the world population live in urban are where space for rural urban migration and pressure for international migration in developed countries is high.

II.BENEFITS OF URBAN GREEN SPACE

2.1 ENVIROMENTAL BENEFITS

2.1.1 WATER QUALITY PROTECTION

Proper landscaping reduces nitrate leaching from the soil into water supply and reduce surface water runoff, keeping phosphorus and other pollutants out of our water ways and preventing septic system overload.

2.1.2 REDUCE HEAT BUILDUP

Trees in parking lot can reduce on site heat buildup decrease runoff and enhance night time cool down Tests in a mall parking lot of Huntsville, Ala. Showed a 31*c difference shaded and unshaded areas.

2.1.3 IMPROVED AIR QUALITY

Trees, shrubs, turf remove smoke, dust and other pollutant from air. One tree can remove 26 pounds of Co2 from atmosphere and release enough O2 for a family of four to breathe.

2.1.4 GREEN ROOFS COOL URBAN HOT SPATS

Led by cities such as Chicago and Toronto as well as number of universities, Evidence is mounting that green roof (i.e. – Proof totally or partially covered with vegetation), can play an important role in saving energy, reducing urban heat island effect and adding more green space to build environment.

2.2 ECONOMIC AND AESTHETICS BENEFITS

2.2.1 BUSINESS BENEFITS

Roadside studies by universities of Washington started that drivers indicated it was easier to locate roadside business when they were framed by trees and vegetation, rather than having green material removed.

2.2.2 PARK IMPROVE PROPERTY VALUE

This is significant link between the value of property and its proximity to park, greenbelts and other green spaces. Studies of three neighborhood in boulder, Colorado indicates that property value decreased by \$4.20 for each foot away green belt.

2.2.3 GREEN SPACE HELPS DECREASE AIR CONDITIONING COST

Here are some useful references, according to California energy commission: “planning correct tree, shrubs, vines and ground cover can make your home both warmer in winter and cooler in summer. In fact, the right type of tree can reduce your summer cooling cost by 20 to 40%”. Computer model devised by U.S. department of energy predicts that the proper placement of only three trees will save an average household between \$100 and \$250 in energy cost annually. The cooling effect of an average size lawns is equal to about 9 tons of air conditioning.

2.2.4 PROTECTS DRAINAGE SYSTEM

The crown of a large trees is a freestanding anti floor reservoir, in some cases intercepting so much rainfall that more than 1500 gallons a year evaporates instead of hitting the ground. Chap down the tree, and you increase the volume of storm water a city must manage something that especially affects older cities with aging drainage system.

2.3 SOCIAL AND PSYCHOLOGICAL BENEFITS

2.3.1 RECREATION AND WELL BEING

People satisfy mostof their recreational need within the locality where they live finding by Nical and Blake in 2000 show that over 80% of U.K. population live in urban areas and thus green spaces in urban areas provide a sustainable proportion of total outdoor leisure opportunities. A study conducted by Helsinki, Finland indicated nearly all (97%) city residents participate in some outdoor recreation during the day. Urban green space serves as near reservoir for relaxation.

2.3.2 HUMAN HEALTH

People who are exposed to natural environment the level of stress decreased rapidly as compared to people who were exposed to urban environment, their stress level remained high. In some review patients in a hospital whose room were facing a park had a 10% faster recovery and need 50% less storage pain relieving medication as compared to patient whose room were facing a building wall. This is a clear indication that urban green spaces can increase the physical and psychological wellbeing of urban citizens. In other research conducted in Swedish cities (Malmo & Lund) show that more time people spend outdoor in urban green spaces, the less they are effected by stress.

III.CHALLENGES TOWARDS MANAGEMENT OF URBAN GREEN SPACES

3.1 SOCIO ECONOMIC AND DEMOGRAPHIC FACORS

High urbanization and high pace of social and economic development in Asia resulting from increase of population of cities, lack of infrastructure, congested traffic, environment degradation and a housing shortage are major issues faced by cities in Asia in their sustainable development. The great threat to health and safety in cities comes from water and air pollution. Those who are poor and do not have adequate ventilation system, air pollution is hazardous for them women and children because they expose regularly and water borne disease are found most commonly in low income groups because of inadequate sanitation, drainage and solid waste collection services. Another most important challenge facing in Asia region due to over urbanization is conversion of agricultural land and forest for urban uses and development of infrastructure in urban areas. As a result widespread removal of vegetation to support urban ecosystem, ground water overdraft and but additional pressure on nearly areas may be ecologically more sensitive and may even increase the higher frequency of flooding in urban areas.

Cities covers 2% of land space worldwide but 75% of all resources.

3.2 QUANTITATIVE ASPECT OF URBAN GREEN SPACES

Understanding relationship between urban population and amount of green spaces is particularly important in evaluating their functionality and of course future planning for population density and cities have a loss of natural areas and natural resources. In addition to medium size cities have relatively high score on natural green factor due to availability of natural green areas. It is important to preserve the green areas either urban green or natural green. **Table 2** Shows the availability of natural and urban green spaces. As most cities especially in developing world, continue to grow in population there is seeming continued decrease in urban space at expense of built up areas. Despite the trend studies shows that people are willing to pay high prices for green space increment.

3.3 QUALITATIVE ASPECTS OF URBAN GREEN SPACES

The evaluation of recreational green space has to be centered on variety of qualities available, sufficiently satisfying and interesting place to stay and enjoy being there. A study conducted in western Canada(USA) shows that people enjoyed varied physical and social opportunities in green space. The benefits people desire can directly be linked to a particular recreational activity and physical, social and management for their provision. Commonly used terms to refers to quantity of green spaces or green space ratio, green space coverage and green space area per capita. It is difficult to measure appropriate amount of required land and allocation of land and calculate distance from residential areas and especially to implement the measurement can building up urban green space with proper services in highly populated countries. Table 1 shows the standard of minimum sizes of various type of green spaces in urban areas as of 26 cities from 15 European countries considered 4 groups of 26 cities, according to their population size such metropolis, big cities, medium size cities and small cities. Consider the four groups of variables such as urban green areas, forest agricultural areas and water, another factor analysis shows the two categories of cities included in study “Natural Green Areas” (N) (Such as forest and agricultural areas), and “urban green areas” (U) (Such as urban green and water). Finally the study concludes that the metropolis and big cities have a high score on urban green factor. Because the cities are old, the cities have highSetting characteristics. Most people cited getting away from daily demand of life and relieving stress as reason of visiting green spaces.

IV.FACT AND FIGURES

4.1 MINIMUM STANDARD FOR URBAN GREEN SPACES

Functional level	Maximum distance from home(meter)	Minimum surface area (Hectare)
Residential green	150	
Neighborhood green	400	
Quarter green	800	10(Park: 5 Hectare)
District green	1600	30(Park: Hectare)
City green	3200	60
Urban green	5000	>200(Smaller towns) >300(Big cities)

Source: Herzale and Wiedemann

4.2 AVAILABILITY OF NATURAL AND URBAN GREEN IN EUROPEAN CITIES

Metropolis population 1000,000+	Big cities population 500,000-1000,000	Medium sized cities population 100,000- 500,000	Small cities population 100,000
Berlin(U)	Birmingham(U)	Antwerp	Alphenoonde
Budapest(U)	Cracovia(N)	Berm	Rijn
Istanbul(N)	Genoa(U)	Chmnitz(N)	Freiberg
Vienna(U)	Helsinki(U)	Dresden(N)	Gorlitz
Warsaw(U)	Ladz(N)	Edinburgh(U)	

U: Urban green, N: Natural green

Source: Tuzin and others 2002.

Cities responsible for most of consumption of world's citizen as well. Green space is part of and also represents habitat and ecosystem.

V.CONCLUSIONS

Urban green spaces fulfill many functions in urban context that benefit peoples quality of life. There is therefore a broad consensus about importance and value of urban green space in cities towards planning and constructing sustainable or eco-cities of 21st country. Steadily growing traffic and urban heat, especially in developing countries is not only damaging the environment but also incur social and economic cost. The economic benefit bestowed in green space which range from protecting and maintaining the biodiversity to helping in migration of change can't be overlooked in today's sustainable planning. Inner city green spaces are especially important for improving air quality through uptake of pollutant gases and particulates which are responsible for respiratory infection. Green spaces also help in reduction of energy cost of cooling building effectively. Further more due to amenity and aesthetics green space increases property value. Green space need to be uniformly distributed throughout the city should be large enough to accommodate city population needs.

REFERENCES

- [1.] .Environmental Benefits of Green Space: Environmental Benefits Fact Sheet Green spaces are a great benefit to our environment. They filter pollutants and dust from projectevergreen.org
- [2.] <http://projectevergreen.org/resources/environmental-benefits-of-green-space/>
- [3.] Environmental Benefits of Green Space: Environmental Benefits Fact Sheet Green spaces are a great benefit to our environment. They filter pollutants and dust from projectevergreen.org
- [4.] <http://projectevergreen.org/resources/environmental-benefits-of-green-space/>
- [5.] <http://www.sciencedirect.com/science/article/pii/S1618866715001016>
- [6.] Economic Benefits of Urban Green Space
- [7.] https://www.google.co.in/search?client=ms-android-lenovo&ei=h5hyWu6LBIfhvASN7ITQAw&q=economic+benefits+of+urban+green+spaces&oq=economic+benefits+of+green+urban+spaces&gs_l=mobile-gws-serp.1.0.0i8i30k113.3009.8017.0.8911.15.12.0.0.0.0.268.2329.0j9j3.12.0....0...1c.1j4.64.mobile-gws-serp..5.10.2018...0i30k1j0i8i7i30k1j0i13i30k1.0.38Dj8TdAtek
- [8.] <http://projectevergreen.org/resources/economic-benefits-of-green-spaces/>
- [9.] Urban Green Spaces and an Integrative...- Scientific Research Publishing PDF <http://scirp.org>pdf>JEP2011050...>
- [10.] [http://en.m.wikipedia.org/wiki/Urban open space](http://en.m.wikipedia.org/wiki/Urban_open_space)
- [11.] Tuzin and others research of Urban Green Spaces-Google Search
- [12.] <https://www.google.co.in/search?q=tuzin+and+others+research+of+urban+green+spaces&oq=tuzin+and+others+research+of+urban+green+spaces&aqs=chrome..69i57j33.18494j0j7&client=ms-android-lenovo&sourceid=chrome-mobile&ie=UTF-8>