Sustainable Urban Open Green Spaces: Opportunities and Challenges

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Table of contents:

1. Introduction  
   Problem statement, Sustainability

2. Methodology

3. Opportunities and challenges  
   Physical features, Public accessibility, Vibrant space, Ecological principles

4. Universal standards

5. Interaction of multiple sustainable parameters

6. Conclusion and recommendations
1. Introduction:

Problem statement:
• urban development & compact cities
• shortage of open green space
• environmental pollution, shortage of resources, overpopulation and urban heat islands

Urban open green spaces are not only aesthetic qualities but also
• significant ecosystem service
• climate proof
• carbon sequestration
• quality of life
Sustainable urban development:
• concerned with maximizing economic and social development in a balance with environmental protection
• covers land use, urban transport, urban ecology, social justice and socio-cultural issues

Benefits:
• 1. Social: social interaction, social cohesion, crime reduction, reduced accident probability, aesthetic, regional identity, recreation, nature education, and nature experience, children’s play, sport, direct and indirect health (mental and physical) effects.
• 2. Environment: nature conservation (ecological benefits), biodiversity and wild life, urban climate, cooling (reduction of air temperature and urban heat island), air flow, air quality, reduction of air pollution, carbon sequestration, noise reduction and clean up contaminants.
• 3. Economic: water management (soil protection – rain water drainage), tourism, property price, food production, energy saving and enhancing workers’ productivity.
2. Methodology:

- Literature was chosen to explain the relationship of urban green spaces and sustainability.
- This study applied multidisciplinary and transdisciplinary approach.
- Papers were selected from those published between the years 1994 to 2014 and they included theoretical, empirical, and reviewed ones.
Subjects

Finding related categories

Selection of key words

Search databases

Analysis and summarize

Urban open green spaces

Urban landscape, natural resources, urban ecology, urban management, urban biogeography, urban horticulture, urban forestry, urban planning and design

Urban green space, open space, public space, urban environment, sustainability and sustainable development

Science Direct, Scopus, ProQuest …

Emerged papers
3. Opportunities and challenges:

3.1. Physical features
Larger green areas
• Foster more animal and plant species than smaller or isolated ones.
• Exceeded number of visitors and also physical activity.

Facilities and amenities
• Positively influence social and environmental sustainability
Such as playgrounds, football field, paths or trails, sport complexes, shade structures, rest rooms, drinking fountains, and water features

3.2 Public accessibility:
• Proximity to green spaces is an equity parameter that can raise physical activities.
3.3 Vibrant space:
- Different active land uses such as restaurants, hotels and shops assistance vibrant, live public space
- By attracting “eyes on street” these spaces promote safety, supports cultural diversity and eliminates social distinction

3.4. Ecological principles
The ecological design could create a spatial pattern, biomass structure, community assemblage and natural species composition.
Open green spaces should:

- Be accessible to both genders, all ages, ethnic and cultural groups
- Have a variety of transportation facilities: walking and biking paths and public transportation
- Be safe, clean, well maintained, culturally sensitive and aesthetically pleasing
- Foster social interaction and cohesion
- Improve ecological function and biological diversity in geographically appropriate locations.
- Create habitats to support native biodiversity
- Be connected by green corridors and form a green network.
5. Interaction of sustainable parameters:

- There are intercommunications between environmental, social and economic dimensions of sustainability.
- It emphasized the necessity of diversity, connectivity, and access for: human and natural life.
- Sustainable park: combining sustainable development with human well-being

Can be achieved by: providing environmental education, opportunities for social interaction, and access to nature, with emphasis on human health and landscape restoration, while facilitating public and private partnership, developing community stewardship and regional pride.
6. Conclusion and recommendations:

Innovative ideas and opportunities to enhance greenery:

• Not only traditional green spaces (e.g. urban parks and playing fields) but also informal urban green spaces (e.g. brownfields, vacant lots, streets, and railways) potentially are part of urban nature.
• A setback along roadsides could create a planting strip
• Elevated green space: rooftop gardens and vertical greening (high-tech construction and native Species)
• Brownfields, vacant land are opportunities in old urban areas
• Old rivers, canals or power lines are potential for linear green spaces
References:


Thank You