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Integration of disaster management strategies with planning and designing public open spaces

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Abstract

Public open spaces (POS) are often used as a strategy to enhance cities' sustainability while using it as a mode to improve the quality of life, aesthetic beauty, environmental health, economic growth and to increase the walkability, live ability and vitality of cities. However, sustainable development should comprise the improvements of disaster resilience. Moreover, past disaster events evidence that these POS have a significant potential to contribute to disaster management as a primary place to rescue and for shelters, as an agent of recovery, to provide essential life support and potential for adaptive response. Yet, lack of attempts have been made to harness this potential through the integration of disaster management strategies into planning and designing POS in cities. Accordingly, this ongoing research study aims to find out the innovative planning and designing methods, integrated with disaster management strategies to plan and design POS in cities. Accordingly, this research paper analyses the existing literature investigating the usage of POS in past disaster events and cross-compare the identified disaster management strategies with the sustainable planning and design strategies. Finally, the findings present five main approaches to integrate the disaster management strategies into planning and designing public open spaces.

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1. Introduction

The term 'Public open spaces' (POS) became popular in 19th century in United Kingdom and United States with a focus on allocating outdoor spaces to improve the health and quality of life of the working class people who lived in squalid and congested living environment [1]. Since then, the allocation of POS became more apparent, especially in the urban context with a continuous change of the key focus of the provision, varying from providing green spaces to preserving ecologically sensitive areas; increasing property values; providing places for recreation and so on. Due to these changes of the key focus, there can be different interpretations to the meaning of public open spaces varying from 'green space' (e.g. parks, greenways) to all public spaces including streets and squares and private open spaces such as gardens and courtyards [2]. However, considering the focus of the study, within this study 'Public Open Spaces' are considered as any outdoor space accessible to the public and allocated for the public activities, e.g. Public squares, Parks and gardens, Amenity green spaces and coastlines.

1.1. Current Focus of POS

Thompson [3] states, the most popular use public open space is the idea of protecting and enhancing the natural resources and green networks while linking the recreational uses. Adding the socio cultural aspect to this, Carmona [4] positions the external POS as a place to provide life breath to the cities by adding recreational opportunities, venues for special events, wildlife habitats and opportunities for the movement of the people. POS in cities act as a place to celebrate cultural diversity, to engage with natural environment, a place to meet the strangers and one can transcend and the other can be anonymous [3]. Similarly, open spaces can encourage the outdoor activities and results to increase the social integration and interaction among the people [5]. Confirming this, Woolley [6] has stated that the most obvious benefit of urban open space is the social benefit as it provides spaces for people to engage, to do something and take part in an event. Further, urban green parks help to reduce the stress of city dwellers and provide the sense of peacefulness and calmness [5]. Furthermore, currently there is more emphasis on the need of focusing more on aspects such as inclusive design which means design for all including children, disabled people, aged people, ethnic minority groups considering their cultural experiences.

Apart from these psychological and socio-cultural benefits, studies confirm that the better access to attractive large POS encourage the walkability and physical activities of the people which can potentially contribute to the physical health of local residents [1]. Furthermore, most of the contemporary urban planners and designers are keen to include greenery to the POS considering the aesthetic beauty and the environmental benefits to the place. [5] says urban parks offer range of environmental services such as air and water purification, wind and noise filtering, or microclimate stabilization. Specifically, green spaces are identified as an important feature for the climate change adaptation as it can provide many benefits providing natural cooling effect, evapotranspiration can reduce peak summer temperatures and temperature in tropical countries, apart from that vegetation reduce the surface runoff of rainwater [7].

Beside the direct benefits, POS can be planned considering the economic benefits for municipalities and citizens. For instance, promoting aesthetic, historical and recreational values through the POS of the city benefit the tourism industry which bring more employment opportunities and income to the municipalities. Further, natural and recreational elements increase the property value and therefore the tax revenues [5]. Confirming this, Tajima [8] states that the Parks and open spaces have a positive effect on the sales price or the value of the property. Likewise, Public open space can contribute to the total development of the area and the urban structure. First residents prefer to live close to POS, are afforded to access to open space, Secondly, it effect to invest on increasing the quality of public open space, then people get more attracted to these recreational facilities and quality public places [9].

In summary, above literature synthesis reveals four main areas that mostly planners and designers focus on, when planning and designing POS. Those are, liveability of the city, socio cultural benefits, environmental benefits and economic benefits. Accordingly, it can be noted that, POS contribute to sustainable cities from all its three counts; social, economic, and environmental.

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