

Urban Design as a Tool in Disaster Resilience and Urban Hazard Mitigation: Case of Cochin, Kerala, India

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Abstract : Disasters of all types are occurring more frequently and are becoming more costly than ever due to various manmade factors including climate change. A better utilisation of the concept of governance and management within disaster risk reduction is inevitable and of utmost importance. There is a need to explore the role of pre- and post-disaster public policies. The role of urban planning/design in shaping the opportunities of households, individuals and collectively the settlements for achieving recovery has to be explored. Governance strategies that can better support the integration of disaster risk reduction and management has to be examined. The main aim is to thereby build the resilience of individuals and communities and thus, the states too. Resilience is a term that is usually linked to the fields of disaster management and mitigation, but today has become an integral part of planning and design of cities. Disaster resilience broadly describes the ability of an individual or community to 'bounce back' from disaster impacts, through improved mitigation, preparedness, response, and recovery. The growing population of the world has resulted in the inflow and use of resources, creating a pressure on the various natural systems and inequity in the distribution of resources. This makes cities vulnerable to multiple attacks by both natural and man-made disasters. Each urban area needs elaborate studies and study based strategies to proceed in the discussed direction. Cochin in Kerala is the fastest and largest growing city with a population of more than 26 lakhs. The main concern that has been looked into in this paper is making cities resilient by designing a framework of strategies based on urban design principles for an immediate response system especially focussing on the city of Cochin, Kerala, India. The paper discusses, understanding the spatial transformations due to disasters and the role of spatial planning in the context of significant disasters. The paper also aims in developing a model taking into consideration of various factors such as land use, open spaces, transportation networks, physical and social infrastructure, building design, and density and ecology that can be implemented in any city of any context. Guidelines are made for the smooth evacuation of people through hassle-free transport networks, protecting vulnerable areas in the city, providing adequate open spaces for shelters and gatherings, making available basic amenities to affected population within reachable distance, etc. by using the tool of urban design. Strategies at the city level and neighbourhood level have been developed with inferences from vulnerability analysis and case studies.

Keywords : disaster management, resilience, spatial planning, spatial transformations

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