

De-Densifying Congested Cores of Cities and Their Emerging Design Opportunities

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Abstract : Every city has a threshold known as urban carrying capacity based on which it can withstand a particular density of people, above which the city might need to resort to measures like expanding its boundaries or growing vertically. As a result of this circumstance, the number of squatter communities is growing, as is the claustrophobic feeling of being confined inside a "concrete jungle." The expansion of suburbs, commercial areas, and industrial real estate in the areas surrounding medium-sized cities has resulted in changes to their landscapes and urban forms, as well as a systematic shift in their role in the urban hierarchy when functional endowment and connections to other territories are considered. The urban carrying capacity idea provides crucial guidance for city administrators and planners in better managing, designing, planning, constructing, and distributing urban resources to satisfy the huge demands of an evergrowing urban population. An ecological footprint is a criterion of urban carrying capacity, which is the amount of land required to provide humanity with renewable resources and absorb its trash. However, as each piece of land has its unique carrying capacity, including ecological, social, and economic considerations, these metropolitan areas begin to reach a saturation point over time. Various city models have been tried throughout the years to meet the increasing urban population density by moving the zones of work, life, and leisure to achieve maximum sustainable growth. The current scenario is that of a vertical city and compact city concept, in which the maximum density of people is attempted to fit into a definite area using efficient land use and a variety of other strategies, but this has proven to be a very unsustainable method of growth, as evidenced by the COVID-19 period. Due to a shortage of housing and basic infrastructure, densely populated cities gave rise to massive squatter communities, unable to accommodate the overflowing migrants. To achieve optimum carrying capacity, planning measures such as polycentric city and diffuse city concepts can be implemented, which will help to relieve the congested city core by relocating certain sectors of the town to the city periphery, which will help to create newer spaces for design in terms of public space, transportation, and housing, which is a major concern in the current scenario. The study's goal is focused on suggesting design options and solutions in terms of placemaking for better urban quality and urban life for the citizens once city centres have been de-densified based on urban carrying capacity and ecological footprint, taking the case of Kochi as an apt example of a highly densified city core, focusing on Edappally, which is an agglomeration of many urban factors.

Keywords : urban carrying capacity, urbanization, urban sprawl, ecological footprint

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