

## Urban Compactness and Sustainability: Beijing Experience

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**Abstract :** Beijing has several compact residential housing settings in many of its urban districts. The study in this paper reveals that urban compactness, as predictor of density, may carry an altogether different meaning in the developing world when compared to the U.S for achieving objectives of urban sustainability. Recent urban design studies in the U.S are debating for compact and mixed-use higher density housing to achieve sustainable and energy efficient living environments. While the concept of urban compactness is widely accepted as an approach in modern architectural and urban design fields, this belief may not directly carry well into all areas within cities of developing countries. Beijing's technology-driven economy, with its historic and rich cultural heritage and a highly speculated real-estate market, extends its urban boundaries into multiple compact urban settings of varying scales and densities. The accelerated pace of migration from the countryside for better opportunities has led to unsustainable and uncontrolled buildups in order to meet the growing population demand within and outside of the urban center. This unwarranted compactness in certain urban zones has produced an unhealthy physical density with serious environmental and ecological challenging basic living conditions. In addition, crowding, traffic congestion, pollution and limited housing surrounding this compactness is a threat to public health. Several residential blocks in close proximity to each other were found quite compacted, or ill-planned, with residential sites due to lack of proper planning in Beijing. Most of them at first sight appear to be compact and dense but further analytical studies revealed that what appear to be dense actually are not as dense as to make a good case that could serve as the corner stone of sustainability and energy efficiency. This study considered several factors including floor area ratio (FAR), ground coverage (GSI), open space ratio (OSR) as indicators in analyzing urban compactness as a predictor of density. The findings suggest that these measures, influencing the density of residential sites under study, were much smaller in density than expected given their compact adjacencies. Further analysis revealed that several residential housing appear to support the notion of density in its compact layout but are actually compacted due to unregulated planning marred by lack of proper urban design standards, policies and guidelines specific to their urban context and condition.

**Keywords :** Beijing, density, sustainability, urban compactness

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