

## **Assessment of Energy Consumption in Cluster Redevelopment: A Case Study of Bhendi Bazar in Mumbai**

**Authors :** Insiya Kapasi, Roshni Udyavar Yehuda

**Abstract :** Cluster Redevelopment is a new concept in the city of Mumbai. Its regulations were laid down by the government in 2009. The concept of cluster redevelopment encompasses a group of buildings defined by a boundary as specified by the municipal authority (in this case, Mumbai), which may be dilapidated or approved for redevelopment. The study analyses the effect of cluster redevelopment in the form of renewal of old group of buildings as compared to refurbishment or restoration - on energy consumption. The methodology includes methods of assessment to determine increase or decrease in energy consumption in cluster redevelopment based on different criteria such as carpet area of the units, building envelope and its architectural elements. Results show that as the area and number of units increase the Energy consumption increases and the EPI (energy performance index) decreases as compared to the base case. The energy consumption per unit area declines by 29% in the proposed cluster redevelopment as compared to the original settlement. It is recommended that although the development is spacious and provides more light and ventilation, aspects such as glass type, traditional architectural features and consumer behavior are critical in the reduction of energy consumption.

**Keywords :** Cluster Redevelopment, Energy Consumption, Energy Efficiency, Typologies

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