

Sustainability in Affordable Housing: Trends and Opportunities for Connected Communities

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ABSTRACT

One of the central goals of affordable housing is to provide a decent and suitable living environment, which includes ensuring the housing is of good quality and is economically affordable. It is also vital for housing to continue to maintain these qualities throughout the building's life cycle. Incorporating sustainable building practices can improve energy efficiency, reduce the waste of resources, and provide healthier living environments for the occupants. With the increase in intelligent technologies, opportunities exist to enhance sustainability and affordability in residential communities by utilizing smart technologies. This paper involves a critical review of the literature involving sustainable buildings and affordable housing and seeks to identify opportunities to implement smart and connected technologies while enabling those communities to achieve sustainability goals. In addition, this study highlights the current trends such as building-to-grid connections, distributed energy resources, and the potential impacts of these technologies on connected communities. The study highlights several opportunities to improve sustainability and connectedness in affordable housing. However, several factors should be addressed in implementing new technology, such as utilizing proper data management, defining beneficial information exchanges, and addressing complex human-building interactions.