

Development phases from heritage buildings to smart buildings

ABSTRACT

This research addresses the phases of buildings development, focusing on heritage buildings and their possible transformation or adaptation into smart buildings, environmental friendly and, at the same time, keeping their heritage features and values. Adopting a methodological framework in order to collect and analyze the past, present and future of buildings, the research aims to evaluate the possibility of turning heritage buildings into more “green” and sustainable ones, guiding the research into a comparison of construction materials, traditional and futuristic design features, as well as the environmental impact of each era and energy sources. The study also aims to find the link among the past, present and future in order to better understand the sustainable ancient techniques and compare them to the modern ones, allowing not just to find their possible use in modern designs, but also to better identify the necessities in turning heritage building into a smart one. Some of the found examples show the viability of such transformation and the general satisfaction of their users, providing not just a better energy consumption but also helping on the environmental preservation.

Keyword: Heritage buildings; Smart buildings; Home automation; Sustainability; Green buildings