CEES 2023

CEES 2023 | 2nd International Conference on Construction, Energy, Environment & Sustainability
27-30 June 2023, Funchal - Portugal

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HOW CAN DIGITALIZATION SUPPORT NEW CHALLENGES OF CONSTRUCTION SECTOR

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Keywords

Construction; Energy; Environment; Sustainability; Renewable; Digitalization

Abstract

New challenges have been arising in the construction sector. Following Covid-19 pandemic, that brought to light the need for wellbeing and healthy building in housing design, the recent increase in energy costs and energy security concerns in Europe sets the urgency for energy efficient existing homes, setting the tone for deep and fast retrofitting. These happens in a time of rapid evolution in buildings and users' energy demand. We are thus facing the future of both energy and construction sectors, as technology improves citizens day to day life, bringing concepts such as digitalization, automatism, AI, IoT and electric mobility to buildings. New challenge arises: how to combine them to foster energy efficiency, comfort and savings in buildings that will progressively be transformed by greater electrification? How can the construction sector keep up the pace with these new challenges and emerging household requirements? Digital tools, such as One-Stop-Shops and Building Logbooks, can act as key drivers, bringing companies closer to consumers and improving their response to households needs and targets settled by European regulation, such as RePowerEU, Energy Performance of Buildings Directive and Long-Term Renovation Strategies. This study addresses these questions, focusing on data and experience gathered from Portal casA+, a Portuguese One-Stop-Shop to foster energy and water efficiency in domestic buildings. Alongside, Portuguese building's evolution in the past thirteen years is analysed in terms of energy performance, consumption, and equipment. To this end, information from the Portuguese Building Energy Certification System (SCE), National Statistical Institute (INE) and further data are analysed, to understand and forecast energy use and improvements in buildings, including the impact of the Portuguese energy efficiency legislation in current energy consumption. Finally, this study aims to also bring awareness to the contribution of digital tools, pointing the direction to an agile Construction 4.0 applied to building retrofit.