INTELLIGENT INITIATIVES TO REDUCE CO_2 EMISSIONS IN CONSTRUCTION – A SYSTEMATIC REVIEW

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Construction industry, accounting for emissions up to 50%, is the largest source of GHG emissions globally. GHG emission is one of the main causes of global warming that many countries are experiencing its adverse impacts. In this regard, there is urgent need to mitigate the amount of GHG emissions, which requires the world effort. By transforming from traditional and conventional construction to new technologies, materials and automated practices both hardware and soft computing aspects, there would be a great potential for CO2 emissions reduction in the construction industry.
This paper reviewed the state-of-the-art application of digital tool technologies applied in construction for making them smart, automated, and digitalized in order to reduce CO2 emissions. This paper reviewed relevant papers within databases, such as Scopus and WoS, including journal papers published. These papers were then analyzed in terms of bibliography and content to identify more related systems, practices, and contributors. A designed systematic review method was used to identify and select the relevant papers, which were then reviewed for their content. The literature presented various applications, systems, or methods and reported the results of using IoT, additive manufacturing, artificial intelligence and machine learning, sustainable material selection and optimization methods among the new practices to which the world is shifting its direction.

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