

Research Trends on Green Roof Applications and Materials in Green Buildings

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ABSTRACT

Green roof is a vegetated roof system to minimize the negative impacts of urbanization. This systematic review focuses on trends in green roof applications and materials for green buildings published between 2000 and 2022, using the PRISMA method. The database search was conducted using Scopus, obtaining 90 relevant articles. The articles were categorized based on the green roof applications (hydrological performance, stormwater quality, and urban heat island (UHI)) and the materials used, yielding 45 articles each on commercial materials and recycled waste. The highest number of articles were published in the "Journal of Building Engineering." Between 2012 and 2022, it is observed that recycled waste was the most widely researched material within the published literature. Research interest in utilizing recycled waste material for green buildings has substantially increased. The use of waste material for green buildings shows a promising advancement in improving stormwater management i.e., in hydrological performance and quality, as well as reducing UHI.

KEYWORDS

Green roof, green building, recycled waste, stormwater management, urban heat island

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