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"Global and Local Approaches to Energy Efficiency in Green Building Certifications: A Comparative Analytical Study"

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Abstract:

This research explores the role of green building certification systems in promoting energy efficiency, focusing on internationally recognized frameworks such as LEED (Leadership in Energy and Environmental Design) and BREEAM (Building Research Establishment Environmental Assessment Method), alongside local systems like DGNB (German Sustainable Building Council) and Egypt's Green Pyramids Rating System. The research problem is the limited effectiveness of sustainable building systems and standards at the local level in achieving energy-efficient design and construction. The study aims to leverage insights from global sustainable building standards to enhance the efficiency of local systems in achieving energy savings. Using a comparative analytical approach to evaluate both global and local standards, the effectiveness of these systems is analyzed by examining their criteria and approaches to energy optimization. The study investigates the varying emphasis placed on energy efficiency across these certification systems, taking into account regional factors such as climate, resource availability, and local building practices. A SWOT analysis (strengths, weaknesses, opportunities, and threats) assesses the effectiveness of these systems in enhancing energy efficiency. Ultimately, the study provides recommendations to improve energy efficiency strategies within these frameworks, fostering a more sustainable built environment..

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