Biomimetics As An Analogical Reasoning Ideology In Architectural & Interior Design

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Abstract:

Biomimetics approaches involve finding solutions to design problems by mimicking the functions and/or processes of biological systems, by applying an analog reasoning strategy from ecosystems to technology in a way that addresses the challenges of architectural and interior design in a more sustainable way. This is due to it is a sustainable creative thinking ideology producing more inspiring solutions that are most restorative and regenerative ecosystems ... The study assumes that mimicking the processes and functions of ecosystems enhances the structural efficiency of the building and stimulates the creation of innovative materials, urging synthesis of innovative materials, as well as providing more sustainable technologies in waste and water management, In addition to reducing energy consumption by adopting mechanisms that passively provide thermal comfort, in conjunction with maximizing the principle of generating energy from renewable sources ... This study was presented to verify the ability of Biomimetics as an analogue ideology in raising the efficiency of the operational building performance from a structural efficiency perspective, and reduce energy consumption.

Therefore, this study included evaluating the efficiency of applying that intellectual methodology based on analog transfer of functions and processes of biological systems in providing the building environment with the characteristics of innovation and sustainability, as well as studying the ability of that intellectual methodology to raise the structural efficiency of the building, and discuss the impact of its activation on the synthesis of advanced materials in conjunction with a study of its ability to improve water and waste management, in addition to

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enhancing the thermoregulation of the indoor environment within a sustainable environmental framework; corresponding to the operational performance of the ecosystem enhanced by the regenerative design in architecture that promotes the repair and renewal of surrounding ecosystems.

Keywords:
Biomimetics – Ecological Sustainability - Regenerative Thinking Ideologies – Analogy - Analogical Reasoning (AR) – Analogical Transfer – Functional Bridge of Analogy.