


Abstract

Transformational Potential of Urbanization Based on Biomimicry Notions [†]

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Abstract: One avenue for creating climate adaptation that has not yet been investigated is the urbanization process. Using ideas from nature seems to be a viable strategy for cities facing this problem. Investigating whether biomimicry concepts may enhance urban settings is the focus of this abstract. Long-term sustainability is promised by the creation of materials and structures that mimic nature and natural processes, in addition to addressing climate adaption. Natural disasters may be addressed more effectively with the use of biomimicry, which draws inspiration from biological processes and aims to prolong civilizations. In addition, a number of contemporary biomimetic solutions will be examined, along with their impacts, including structural organization inspired by honeycombs, batteries inspired by electric eels, spiders as a source of silk, and gecko stickiness in adhesive techniques. In addition to promoting sustainability, examining these tried-and-true natural solutions enhances the robustness and efficiency of engineered materials and buildings. By combining interdisciplinary research and a literature review, this study uncovers the untapped potential of biomimicry and urban evolution to provide adaptable solutions that align with the equilibrium of natural ecosystems. As cities grow and adapt to these obstacles, incorporating biomimicry into materials and buildings is a key but understudied characteristic. Urbanization's revolutionary potential based on biomimicry principles is highlighted in this abstract, laying the groundwork for future research.

Keywords: climate; biomimicry; sustainability; ecosystem; urban evolution



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