

عنوان مقاله:

Structural Systems According to the Mathematical Theory of Fractals

محل انتشار:

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خلاصه مقاله:

The fractal structures are highly economical, self-sufficient and rapidly deployable models for universal buildings, giving us an opportunity to develop intelligent and healthy spaces for the masses, even under unfavorable conditions and with limited resources. Owing to the flexibility in design, it can adapt to varying landscapes, site locations, cultures and a vast number of functional applications. The properties of self-similar repetitions, abundance of textural details, and cascades of shape in architecture have been characterized by fractal geometry. Architecture can take advantage of the complexity sciences, by the use of present day computer technology, where algorithms of mathematical and geometric functions can produce new motifs of design. Some contemporary buildings approach the idea of fractal architecture by reintroducing both curvatures and subdivisions at different scales, or a self-similar structure of the same motif, thus producing complexity and formal variety. Any form that is self-similar is likely to be fractal. If there is a regular motif or design, which repeats itself as the structure grows or scales - through time or across space, then the structure can be envisaged as a hierarchy, and thus a fractal organization is a hierarchical organization with applications of point-fixed glazing systems range from simple structures, such as shop windows and shelters, to more complicated ones, such as multi-storey buildings. This paper attempts to propose an approach where structural systems can be developed according to the mathematical theory of fractals

کلمات کلیدی:

Architecture, Contemporary Buildings, Fractal Structures, Hierarchical, Self-similar

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