

Parametric Design as an Approach to Respond to Complexity

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Abstract : A city is an intertwined texture from the relationship of different components in a whole which is united in a one, so designing the whole complex and its planning is not an easy matter. By considering that a city is a complex system with infinite components and communications, providing flexible layouts that can respond to the unpredictable character of the city, which is a result of its complexity, is inevitable. Parametric design approach as a new approach can produce flexible and transformative layouts in any stage of design. This study aimed to introduce parametric design as a modern approach to respond to complex urban issues by using descriptive and analytical methods. This paper firstly introduces complex systems and then giving a brief characteristic of complex systems. The flexible design and layout flexibility is another matter in response and simulation of complex urban systems that should be considered in design, which is discussed in this study. In this regard, after describing the nature of the parametric approach as a flexible approach, as well as a tool and appropriate way to respond to features such as limited predictability, reciprocating nature, complex communications, and being sensitive to initial conditions and hierarchy, this paper introduces parametric design.

Keywords : complexity theory, complex system, flexibility, parametric design

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