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A Study on Green Building Certification Systems within the Context of Anticipatory Systems

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Abstract : This paper examines green building certification systems and their current processes in comparison with anticipatory systems. Rapid growth of human population and depletion of natural resources are causing irreparable damage to urban and natural environment. In this context, the concept of 'sustainable architecture' has emerged in the 20th century so as to establish and maintain standards for livable urban spaces, to improve quality of urban life, and to preserve natural resources for future generations. The construction industry is responsible for a large part of the resource consumption and it is believed that the 'green building' designs that emerge in construction industry can reduce environmental problems and contribute to sustainable development around the world. A building must meet a specific set of criteria, set forth through various certification systems, in order to be eligible for designation as a green building. It is disputable whether methods used by green building certification systems today truly serve the purposes of creating a sustainable world. Accordingly, this study will investigate the sets of rating systems used by the most popular green building certification programs, including LEED (Leadership in Energy and Environmental Design), BREEAM (Building Research Establishment's Environmental Assessment Methods), DGNB (Deutsche Gesellschaft für Nachhaltiges Bauen System), in terms of 'Anticipatory Systems' in accordance with the certification processes and their goals, while discussing their contribution to architecture. The basic methodology of the study is as follows. Firstly analyzes of brief historical and literature review of green buildings and certificate systems will be stated. Secondly, processes of green building certificate systems will be disputed by the help of anticipatory systems. Anticipatory Systems is a set of systems designed to generate action-oriented projections and to forecast potential side effects using the most current data. Anticipatory Systems pull the future into the present and take action based on future predictions. Although they do not have a claim to see into the future, they can provide foresight data. When shaping the foresight data, Anticipatory Systems use feedforward instead of feedback, enabling them to forecast the system's behavior and potential side effects by establishing a correlation between the system's present/past behavior and projected results. This study indicates the goals and current status of LEED, BREEAM and DGNB rating systems that created by using the feedback technique will be examined and presented in a chart. In addition, by examining these rating systems with the anticipatory system that using the feedforward method, the negative influences of the potential side effects on the purpose and current status of the rating systems will be shown in another chart. By comparing the two obtained data, the findings will be shown that rating systems are used for different goals than the purposes they are aiming for. In conclusion, the side effects of green building certification systems will be stated by using anticipatory system models.

Keywords : anticipatory systems, BREEAM, certificate systems, DGNB, green buildings, LEED
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