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Construction of a Low Carbon Eco-City Index System Based on CAS Theory: A Case of Hexi Newtown in Nanjing, China

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Abstract : The practice of urban planning and construction based on the concept of the “low carbon eco-city” has been universally accepted by the academic community in response to urban issues such as population, resources, environment, and social development. Based on this, the current article first analyzes the concepts of low carbon eco-city, then builds a complex adaptive system (CAS) theory based on Chinese traditional philosophical thinking, and analyzes the adaptive relationship between material and non-material elements. A three-dimensional evaluation model of natural ecology, economic low carbon, and social harmony was constructed. Finally, the construction of a low carbon eco-city index system in Hexi Newtown of Nanjing was used as an example to verify the effectiveness of the research results; this paradigm provides a new way to achieve a low carbon eco-city system.

Keywords : complex adaptive system, low carbon ecology, index system, model
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