

Research on Urban Carbon Reduction Strategy Based on Sponge City: Chongqing Caijia New Town as an Example

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Abstract : As an ecologically oriented urban development model, Sponge City is an important technical system that responds to the requirements of the "double carbon" policy and promotes the transformation of urban low-carbonization. Based on this, this paper constructs a sponge city carbon reduction model based on domestic and international carbon reduction studies and constructs a sponge city carbon reduction model at the theoretical level based on the sponge city carbon reduction mechanism at the four levels of a global scale, district scale, community scale, and indicator system; at the practical level, the theoretical model is located in the urban scale and neighborhood scale of Caijia New Town in Chongqing. At the urban scale, the Caijia Sponge City special planning is carried out in four aspects: sponge City spatial pattern, low-impact development facility system, low-carbon community, and control index system. At the neighborhood scale, GIS is used for ecological sensitivity evaluation and hydrological analysis, based on which the spatial pattern optimization design is carried out from the three aspects of water catchment unit division, index system construction, and sponge facility spatial planning. Through the design practice of Chongqing Caijia New City, it is helpful to verify the carbon reduction benefits of the sponge city carbon reduction model, guide Caijia New City to realize low-carbon development, and provide a reference for other cities in China to realize the "dual-carbon" transformation.

Keywords : Sponge City, low carbon city, carbon emission reduction pathway, Chongqing

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