

Exploring the Intrinsic Ecology and Suitable Density of Historic Districts Through a Comparative Analysis of Ancient and Modern Ecological Smart Practices

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Abstract : Although urban ecological policies and the public's aspiration for livable environments have expedited the pace of ecological revitalization, historic districts that have evolved through natural ecological processes often become obsolete and less habitable amid rapid urbanization. This raises a critical question about historic districts inherently incapable of being ecological and livable. The thriving concept of 'intrinsic ecology,' characterized by its ability to transform city-district systems into healthy ecosystems with diverse environments, stable functions, and rapid restoration capabilities, holds potential for guiding the integration of ancient and modern ecological wisdom while supporting the dynamic involvement of cultures. This study explores the intrinsic ecology of historic districts from three aspects: 1) Population Density: By comparing the population density before urban population expansion to the present day, determine the reasonable population density for historic districts. 2) Building Density: Using the 'Space-mate' tool for comparative analysis, form a spatial matrix to explore the intrinsic ecology of building density in Chinese historic districts. 3) Green Capacity Ratio: By using ecological districts as control samples, conduct dual comparative analyses (related comparison and upgraded comparison) to determine the intrinsic ecological advantages of the two-dimensional and three-dimensional green volume in historic districts. The study inform a density optimization strategy that supports cultural, social, natural, and economic ecology, contributing to the creation of eco-historic districts.

Keywords : eco-historic districts, intrinsic ecology, suitable density, green capacity ratio.

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