

A Comparative Case Study on the Relationship between Solar Energy Potential and Block Typology and Density in Shanghai Context

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Abstract : This study explores the relationship between solar potential and block typology and density by analyzing sixteen existing typical street blocks with different topologies and densities in Shanghai, a representative high-density urban in China. Several indicators are proposed to quantify, and a methodology is conducted to evaluate and compare the solar potential both on façade and roof across various selected urban forms. 1) The importance of appropriate solar energy indicators and geometric parameters to be used in comparative studies, and 2) the relationship between urban typology, density, and solar performance are discussed. In this way, the results reveal the key design attributes contributing to increasing solar potential.

Keywords : block typology, geometric parameters, high-density urban, solar potential

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