

Advancements in Truss Design for High-Performance Facades and Roof System: A Structural Analysis

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Abstract : This study investigates cutting-edge truss design improvements, which are specifically adapted to satisfy the structural demands and difficulties associated with high-performance facades and roofs in modern architectural environments. With a growing emphasis on sustainability, energy efficiency, and eye-catching architectural aesthetics, the structural components that support these characteristics play an important part in attaining the right balance of form and function. The paper seeks to contribute to the evolution of truss design methods by combining data from these investigations, giving significant insights for architects, engineers, and researchers interested in the creation of high-performance building envelopes. The findings of this study are meant to inform future design standards and practices, promoting the development of structures that seamlessly integrate architectural innovation with structural robustness and environmental responsibility.

Keywords : truss design, high-performance, facades, finite element analysis, structural efficiency

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