

Structural Design of Gridshells aiming at Lightweight Design and Rapid Assembly

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Abstract

Taking Venue B for 2018 World AI Conference as an example, this paper introduces structural design of gridshells aiming at lightweight design and rapid assembly. Steel-timber composite gridshell covers courtyard space in the project. Based on the feedback information of digital visual model, structural design is carried out under interaction between architect and structural engineer to meet the need of lightweight design and rapid assembly. Finally, the span of main gridshell reaches 40 meters, which realizes lightweight and transparent space. The 2000 m² double-curved roof was prefabricated and assembled within 2 months. The paper introduces innovative structural design of gridshells and provide a useful reference for large-span steel-wood structures.



Figure1: Steel-timber gridshell of Vunue B for 2018 World AI Conference, Shanghai

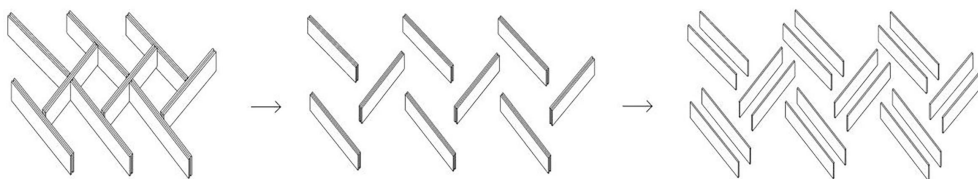


Figure5: Use the straight beam and vertical hollow double beam to fit gridshell surface

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