Aspen Art Museum- Innovative Wood Structure

Course Description

The Aspen Art Museum, designed by architect Shigeru Ban, includes a long-span three-dimensional wood space-frame roof. Ban's charge was to create a wood space frame with spans of more than 50 feet and cantilevers of 14 feet, in a structural depth of 3 feet. The space frame was to have two planes of intersecting diagonal webs of curved members that undulated up and down to touch the planes of the top and bottom chords with no visible connectors. This case study presentation will describe the design and construction of the wood structure, including paths explored but not chosen for the final de-sign.

Learning Objectives

Attendees will be able to:

1. Articulate the particular demands associated with creating a 3-dimensional space frame entirely in wood.
2. Recognize the advantages and disadvantages of several wood connection strategies in space-frame structures.
3. Be aware of manufacturing capabilities and limitations that influenced the design of the Aspen Art Museum roof structure.
4. Understand the importance of early engagement of manufacturing and engineering partners in the design process for innovative wood structures.

Bio

Gregory R. Kingsley, PhD, PE, is the president and CEO of KL&A Inc., Structural Engineers and Builders in Golden, Colorado, a firm of 80 that includes structural engineers, steel detailers, and construction managers. He enjoys working with design architects on innovative structures, especially in masonry and wood.

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