University of Southern California

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Sonny Astani

Department of Civil and Environmental Engineering

USC Viterbi School of Engineering

Seminar Presentation

Dr. Yves Weinand

Director and Head of Laboratory for Timber Construction (IBOIS)
Swiss Federal Institute of Technology Lausanne

Advanced Timber Construction Using Digital Fabrication and Robotics Assemblies

Monday, October 14, 2019
4:00-5:00pm
RRI 101

Abstract: Sustainable timber construction aims to develop optimized design solutions through including the recent advancements in digital fabrication, robotic assembly, material science, and structural mechanics. Toward this end, IBOIS at EPFL aims to develop a next generation of timber construction using a wide range of timber products from natural wood resources such as tree trunks to engineered products such as Laminated Veneer Lumbers. Combining the state of the art in digital architecture, robotic science, and structural engineering, spatial non-standard timber structures are developed using algorithmic geometry processing, and their performance is evaluated using novel mechanical models. The primary aim is to construct timber structures through their form/geometry and without using additional connectors such as screws, nails, fasteners, and adhesives.

Bio: Professor Dr. Yves Weinand, architect and civil engineer, is the director and head of the Laboratory for Timber Constructions (IBOIS) at Swiss Federal Institute of Technology Lausanne (EPFL). He is specialized in the architectural design, digital fabrication and robotic assembly, structural wood mechanics, and timber construction. The interdisciplinary aspect of the timber construction has allowed him and his laboratory to engage in national research centers such as NCCR Digital Fabrication, and international associations.

3620 S. Vermont Avenue, KAP 210
Los Angeles, CA 90089
213-740-0603