Mathematics in Modern Architecture

Helmut Pottmann (Vienna University of Technology)

Many of today's most striking buildings are nontraditional *freeform* shapes. While the digital design of freeform geometry with current modeling tools is well understood, the actual fabrication on the architectural scale is a big challenge, but also a rich source of research topics in geometry and geometric computing. The talk will provide an overview of recent progress in the emerging field of *Architectural Geometry*, elaborate on important relations to contemporary research in Geometry and Computer Graphics, and illustrate the transfer of mathematical research into the architectural practice at hand of selected projects. Finally, we will move beyond architecture and discuss mathematical aspects of computational design and the need for research at the interface of technology and design.