

ARCHITECTURAL GEOMETRY

Helmut Pottmann

King Abdullah University of Science and Technology, Saudi Arabia
helmut.pottmann@kaust.edu.sa

Free forms constitute one of the major trends within contemporary architecture. 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: one has to decompose the skins into manufacturable panels, provide appropriate support structures, meet structural constraints and last, but not least make sure that the cost does not become excessive. These practical requirements form 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 Discrete Differential Geometry and Geometric Optimization, and illustrate the transfer of mathematical research into the architectural practice at hand of selected projects.