

# Philippe Block

Dr. Philippe Block, Professor at the Institute of Technology in Architecture at ETH Zurich, studied architecture and structural engineering at the VUB in Belgium and at MIT in USA. The Block Research Group focuses on equilibrium design methods and computational form finding and fabrication of curved surface structures. Prof. Block is also the director of the Swiss National Centre of Competence in Research (NCCR) Digital Fabrication and partner of Ochsendorf DeJong & Block (ODB Engineering).



Lectio Magistralis

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Aula Magna  
Sede di Sant'Agostino

## Reimagining Shell Structures

Learning from the Master

Throughout history, master builders have discovered expressive forms through the constraints of economy, efficiency and elegance. There is much to learn from the structural principles they developed. Novel structural design tools that extend traditional graphical methods to three dimensions allow designers to discover a vast range of possible shell forms. By better understanding the flow of forces in three dimensions, excess material can be eliminated, natural resources conserved, and humble materials like earth and stone reimagined.

Drawing from a revival of forgotten principles combined with the latest advances in the design, engineering, fabrication and construction of doubly-curved shell structures, this lecture reveals the foundations upon which the award-winning "Beyond Bending" exhibition at the Venice Architecture Biennale in 2016 and the thin, flexibly formed concrete shell of the NEST HiLo project were based.



Photo : Iwan Baan