

From Form-Finding to Fabrication: Pabellón Generativo Michoacán

A generative pavilion built in Morelia, Mexico, explores how form-finding, Voronoi-based segmentation, and digitally fabricated nodes can translate computational logic into a lightweight physical structure assembled from recycled CPVC components.

EcoHouse: Material Efficiency and Digital Control with Rhino and VisualARQ

A compact house in Florianópolis demonstrates how Rhino and VisualARQ can drive material efficiency, reduce waste, and translate a fully controlled digital model into precise on-site construction.

VITRO-P: Generative Design for Customizable Vascular

Networks in Optical Tissue Phantoms

A generative design workflow built in Rhino and Grasshopper is redefining how vascular systems can be simulated, fabricated, and studied. VITRO-P introduces a flexible, fabrication-agnostic approach to creating customizable tissue phantoms with embedded vasculature, bridging computational design and biomedical research.

Itaca: Parametric Design and Large-Scale 3D Printing for a Self-Sufficient Farm

A 3D-printed building developed with Rhino and Grasshopper explores how parametric design and large-scale additive manufacturing can support self-sufficient living systems and circular construction models.

Digital Shingles: Interactive Robotic Shingle Facade

Assembly

The project “Interactive Robotic Shingle Facade Assembly” explores how traditional Swiss woodcraft can be reimaged through digital technologies. This interactive installation invites visitors to customize shingle facade patterns via an intuitive interface and watch a robotic arm assemble their designs in real-time. The installation showcases the potential of robotics and parametric design to revive craftsmanship while promoting sustainable, adaptable architecture.

Shellscape Pavilion: Exploring Wood–Bioplastic Composites in Architecture

The Shellscape Pavilion explores the architectural potential of waste-derived composites through a fully computational and robotic workflow. Developed as part of a PhD research project, this prototype demonstrates how circular materials, structural optimization, and mixed-reality assembly can converge in a full-scale architectural design.

“Exploring Climate-Driven

Design”

Climate Driven Design I is an essential resource for architects, engineers, and sustainability professionals aiming to master net-zero building design. Authored by Christoph Reinhart, a leading expert in sustainable architecture and building science, the book provides a comprehensive framework for understanding atmospheric and thermal conditions in and around buildings.

Optimizing with Grasshopper and DefinitionLibrary: Arup’s Solar-Efficient Community

Arup’s sustainability team utilized digital tools like Grasshopper and DefinitionLibrary to optimize house placements for a gated community, enhancing passive solar performance and creating a data-driven master plan that balances design preferences with energy efficiency.

Pewter Meets Ceramics: The Creative Process of

Zinnterlace

The Zinnterlace project combines traditional materials with modern technology to create sustainable and customizable art, emphasizing the importance of sustainability in contemporary art and design through interdisciplinary collaboration.

Arloize: Turning Wood Scraps into Personalized Clocks

The Arloize project repurposes wood waste into functional art, empowering makers to create modern yet traditional clocks while promoting environmental sustainability and local craftsmanship.