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.

Drawn in Code, Cast in Concrete: The MCIC Monumental Stair

At the Madera Cyber Innovation Center, a monumental stair became the centerpiece of both design ambition and collaborative execution, a sculptural concrete and glass feature shaped by computational design and realized through a fully coordinated digital workflow. This project showcases how advanced modeling tools can turn complex architectural visions into buildable, precise outcomes.

Oberhauser’s Balloon: Parametric Control and Large-Scale Concrete 3D Printing

A 3D printed concrete lamp that embraces its own layered logic, the Oberhauser’s Balloon demonstrates how parametric modeling and Selective Paste Intrusion can redefine scale, precision, and expression in outdoor lighting.

When Performance Becomes Visible: Refining Running Trim with Orca3D

At Bayliss Boatworks, performance is evaluated not only through data, but through how a yacht looks and feels at speed. By leveraging Orca3D’s Marine CFD tools inside Rhino, the design team is refining running trim and stagnation lines, elevating both hydrodynamic behavior and visual clarity on the water.

Silverback Grizzly 21 LE:

Data-Driven Design for Law Enforcement on the Water

A high-performance patrol vessel designed with Petestep’s Spray Deflector Technology and refined through Rhino and Orca3D Marine CFD. The Silverback Grizzly 21 LE sets a new benchmark for speed, efficiency, and crew comfort in law enforcement marine craft.

Waffle-Structured Chair: Exploring Robotic Manufacturing in Design Education

A team of DIA Master’s students at Hochschule Anhalt explored computational design and robotic manufacturing by creating a full-scale, waffle-structured ergonomic chair, combining efficiency, ergonomics, and sustainability. Exhibited at Campus Fest 2025, the project showcased the potential of digital workflows and robotic fabrication in architectural education.

Astroid: A Parametric Ergonomic Mouse Built with Rhino

The Astroid 7000 is a parametric, ergonomic 3D mouse that revives the legacy of the original Spaceball using Rhino as a central tool for design, prototyping, and engineering. This case study highlights how digital modeling can transform legacy concepts into responsive tools for today’s designers.

3DCITYGH: A Parametric Workflow for Digital Urban Survey and City Information Modeling

3DCITYGH presents a modular parametric workflow for generating structured City Information Models from survey data and point clouds, enabling efficient urban-scale modeling for risk assessment, heritage documentation, and structural analysis. Developed within Grasshopper, the approach combines AI-assisted segmentation, custom semantic structuring, and BIM/FEM interoperability.

Digital Clay: A New Layer at the Natural History Museum

At the Natural History Museum’s new Fixing Our Broken Planet gallery, digital design meets sustainable craftsmanship through 3D printed ceramics. Using Rhino and Grasshopper, the team developed modular components that bring innovation to a heritage space without leaving a trace.

Pushing the Limits of Offshore Racing: IMOCA Partners with Orca3D

IMOCA has partnered with Orca3D to bring advanced stability analysis and streamlined design workflows to the world of offshore racing. By leveraging the modeling power of Rhino, this collaboration helps teams build faster, safer, and more consistent IMOCA 60 yachts for the world’s most demanding ocean races.