Digital Fabricators Project: Kerf Fabric

This project emerged from the collaborative efforts of students enrolled in the Digital Construction Bachelor's program at Lucerne University of Applied Sciences and Arts (HSLU).

The meeting box, known as "Kerf Fabric," was developed by Sheila Ebinger, Leon Bumüller, Timothy Nef, and Michael Mangold. They were inspired by wood, Voronoi partitioning, and the Kerf method. Using software tools such as Rhino, Grasshopper, and the OpenNest plugin, they created various surface prototypes, tested different sizes and numbers of Voronoi panels, and adjusted parameters.

This approach allowed for uncomplicated optimizations in a short amount of time. The shape of the hemisphere and the connections adapted to the sphere influenced the production of Voronoi plates using a 3-axis CNC milling machine.

To ensure structural stability, the team incorporated mechanical screws with screwin sleeves in addition to wood screws. One advantage of this process is that no screws are visible inside the Kerf Fabric. The entire fabrication and assembly of the meeting box took a total of four days, with each process spanning two days. The exterior part of the meeting box is scheduled for completion by the end of this year.