Glass Carafes created with RhinoCAM

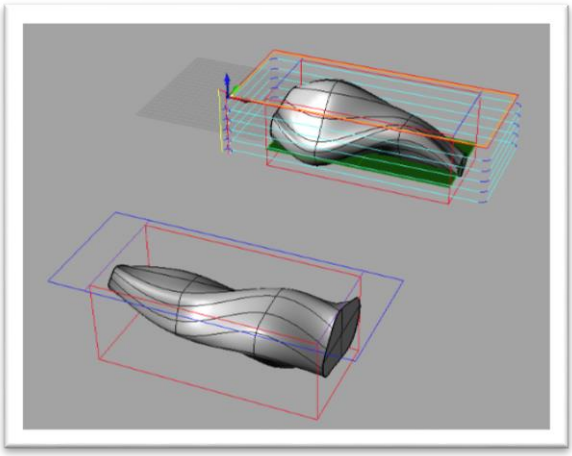
Cornelia Foerster
Channel Sales Manager

"Trasparente - Glass carafe reflecting the water's quality" was a project by Andreas Trenker at the Free University of Bozen in Italy. The project aimed to emphasize the quality of tap water by translating the water's quality into a three-dimensional form. Andreas Trenker designed glass carafes with the Rhinoceros CAD system and machined the molds for making the carafes using RhinoCAM, a CAM system completely integrated in Rhinoceros.

Examples of the carafes created in project 'Trasparente'.

The tap water of South Tyrol is drinkable water of high quality and rich in minerals. Nonetheless, the local population buys water in plastic bottles. The project "Trasparente" aims to emphasize the quality of tap water by translating the water's quality into a three-dimensional form.

Andreas Trenker chose five parameters to define the characteristics for every type of water: sea level of the spring, temperature, water hardness, conductivity and pH value. These parameters are responsible for the water's character and act as differentiators. Every parameter corresponds with a feature of the carafe, for example the sea level influences the height of the carafe.

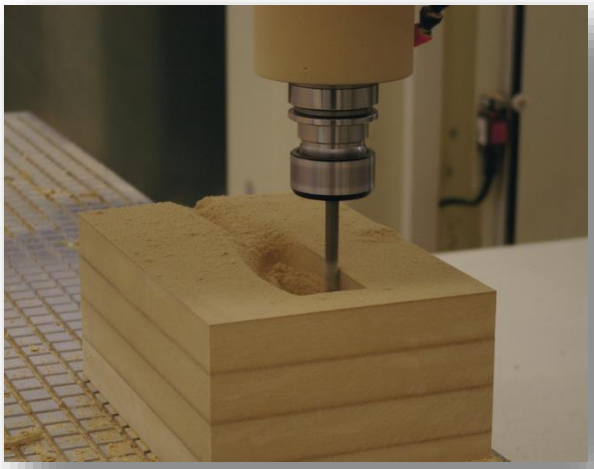


Surfaced models of the carafes

To achieve this, the first step for Andreas Trenker was to create a basic form for the carafe and defined the frame in which the parameters and key values can work. In a second step he defined all relations between water parameters and the carafe.

Glass Carafes created with RhinoCAM

By inserting the five values into a parametric computer program, the Rhinoceros CAD system was used to generate the shape of each carafe depending on the type of water. Different water with similar characteristics will have similarly shaped carafes and vice versa.



Machining the mold cavities for the carafes.

After designing the carafe's shapes as surfaced models in Rhinoceros, the models were split and their shapes were machined in two halves of a mold cut in beech wood. RhinoCAM was used to create the 3D contour milling tool paths to cut the mold cavities.

Then the glassblower created the carafe by blowing the molten glass into the wooden form.

The project is an interaction between new technological tools (parametric programs, generative CAD design, CAM/CNC machining) and old traditional handcraft (glassblowing).

By creating a carafe for all 33 mineral water springs of South Tyrol, Andreas Trenker tried to highlight the differences – not in quality but also in their character – and to enhance their role as drinkable water. Furthermore, he aimed to shape an identity by generating a special carafe for each water source.

The mold cavities are completed and ready for glassblowing.