

*Production ruled by **design.***

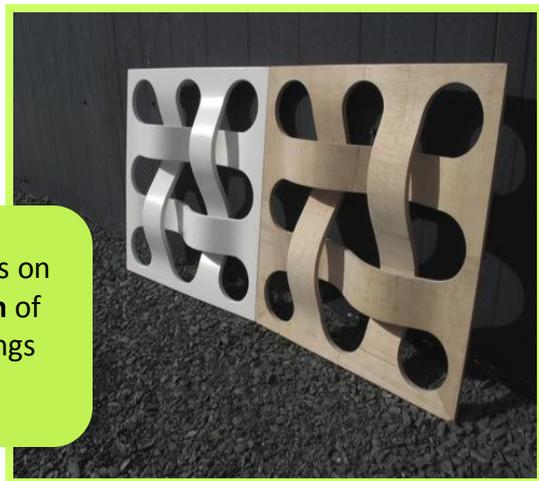
Bächer, Inc., a furniture and woodworking production company based in Germany, works extensively with artists to bring their designs to life. For Sebastian Bächer and his team, 3D Modeling and CNC Machining are an integral part of this process; that is where McNeel's Rhinoceros and MecSoft's RhinoCAM come into play.



Bacher Inc.'s Story

At **Bächer Inc.**, we have positioned ourselves to act as an interface between the master craftsman's careful eye for design and the machinist's ability to implement these design ideas via computer-aided machining. In manufacturing these complex objects shaped by the sensibilities of an artist, our strengths manifest themselves to successfully marry the artist's vision with the reality of a final milled product.

Our production process focuses on the **functional implementation** of design. Pictured here are nettings made from flexible plywood.



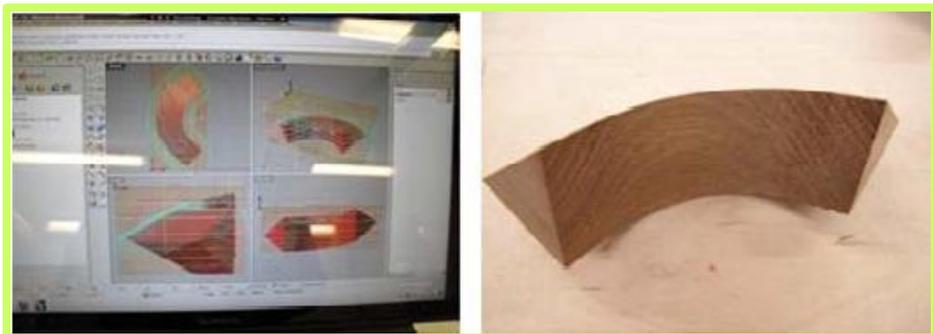
From our customers, we acquire a starting platform anywhere from rough sketches to more polished CAD drawings. Our task is to subsequently build the bridge to the finalized prototype ready for mass production, utilizing CAM technology. We have a number of tools at our disposal, allowing us to vary our methods depending on the subtleties of the project: CNC milling machines, laser cutters, water jet cutting machines, flatbed cutting systems and 3D printers collectively comprise our specialty equipment, though the majority of our machining work is done by 3, 4 and 5 axis woodworking machines (StepFour, SCM and Homag) as well as 4-axis milling machines for metalworking (Hurco).

Ingo Krapf, designer of the chair “Autoban” pictured here, brought to us a unique challenge. The complex pentagonal profile of the chair winds about itself, finally meeting at a point in the seat of the chair. Not only did completing this project require thorough knowledge of the machining process, we also had to adopt a sense of delicacy in regards to the artist’s work itself. Here, form and function are equally important.



Much of the time, we work with customers who are familiar with the CAD/CAM world. Many of them use McNeel’s **Rhinoceros** or other such CAD systems that can easily be converted for use in Rhinoceros. As a result of our compatible technologies, communication with customers is both easy and non-ambiguous.

To go from the CAD models to the necessary CAM post-processing requires an extra translational step. We found the perfect solution in RhinoCAM, the fully integrated in-window plug-in developed by **MecSoft Corporation**. RhinoCAM is actually VisualMill, MecSoft’s flagship standalone CAM software, running completely inside the Rhinoceros native environment. This product allows us to program toolpaths on any modifications of the original CAD file at any stage of the production process. This requirement is vital when we are dealing with artists, as art is never static. Picasso could pick up his paintbrush and daub a smear of color onto his canvas even after he declared it finished; with the help of RhinoCAM, our customers can now do the same.



One of the most important aspects of processing a shape is that the finalized shape and form must match the designer's vision. As a result, our milling process is often complex, involving milling from different sides, the creation of negative moulds and the design and utilization of supports for the part. In addition, we manufacture furniture elements by means of nesting procedures. After a simple series of mouse clicks, RhinoCAM automatically creates the necessary milling paths for the aforementioned nesting procedures.



The "Sonic Chair," created with RhinoCAM.

Not only is RhinoCAM easy to use, MecSoft has developed a robust support division for any technical mishaps. As a result, Rhinoceros and its plug-ins have become indispensable for all of us at Bächer, Inc.

Rhinoceros is the only CAD program we use; RhinoCAM allows us to adapt it to our specific needs. Not only is Rhinoceros's price tag fair, it also supports a number of file formats, giving us the freedom to work with customers who have their own preferences regarding CAD software. All in all, the collective force of Rhinoceros and RhinoCAM has allowed us to produce finalized products with confidence and efficiency, helping our designer customers to share their artistic visions with the world.

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