

## Insight Exhibits, LLC

### RhinoCAM at Insight Exhibits, LLC

Insight Exhibits LLC, <http://www.insightmuseumexhibits.com/> located in Carmel, New York, is one of a handful of design/build shops in the United States specializing in the design and fabrication of museum quality exhibits. We recently sat down with Scott Hoefer, owner/operator of Insight Exhibits to discuss their use of RhinoCAM CNC software.

A cabinet maker by trade, Scott has used other CAM programs in the past including Mastercam. However, when it came to launching his own company, Scott chose RhinoCAM CNC software from MecSoft Corporation.





Why? Well, here's what Scott had to say about RhinoCAM:



***The entry level ease-of-use with RhinoCAM verses Mastercam is no comparison! After my first hour with RhinoCAM, I was cutting a part! After one day of training with RhinoCAM, I was able to cut over 200 production sheets of MDL plywood, each with a different set of toolpaths and all in less than three weeks! That's how easy RhinoCAM is to learn.***

- Scott Hoefer, Owner/Operator, Insight Exhibits, LLC.

Scott and his team at Insight Exhibits designs and fabricates for many well-known museums around the country.

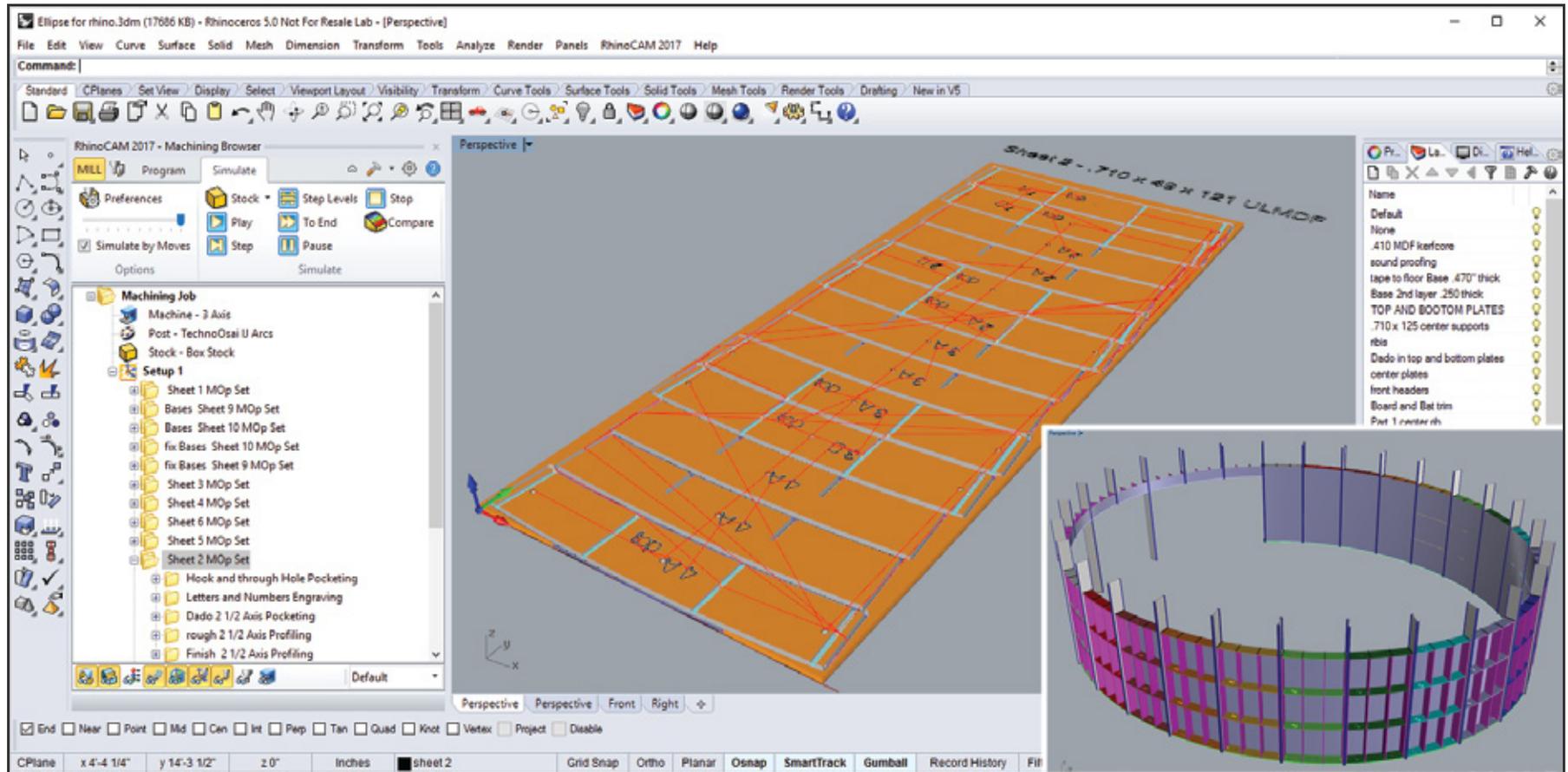
Before we dig deeper into some of Scott's RhinoCAM projects, here is a small sample of some of his work:



## Elliptical Exhibit Enclosure

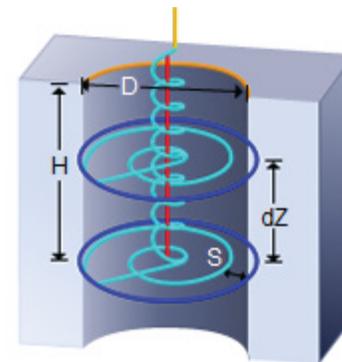
In this project, Scott is machining components for an elliptical exhibit enclosure shown inset in the screen image below. The structural components are cut from  $\frac{3}{4}$ " Ultralight MDF. The outside walls of the enclosure will be wrapped in 1" sound-proofing material. The inside walls will be covered in curve-core bending material. The cut material simulation

for Sheet #2 is shown below. Under Setup 1 in the Machining Job tree on the left, you see a MOp Set folder for each sheet containing the toolpath operations needed for that sheet.



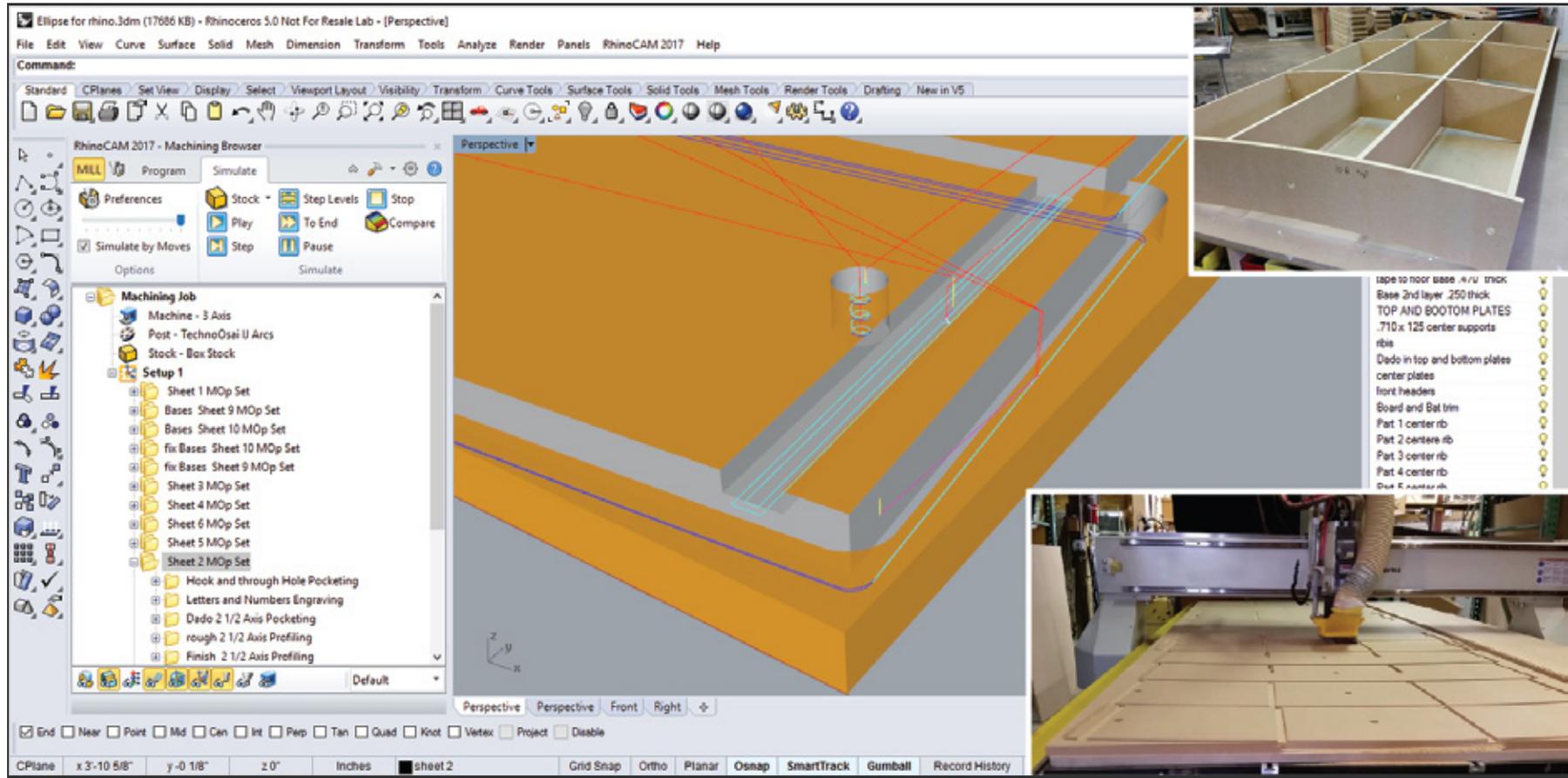
The cut material simulation for Sheet 2 is shown in RhinoCAM. Under Setup 1 in the RhinoCAM Machining Browser on the left, we see a MOp Set for each sheet, each containing the toolpath operations required for that sheet.  
**(Inset bottom Right)** The Rhino 3D model of the exhibit assembly is shown.

Under Sheet 2 MOp Set, you see that Scott has programmed several toolpath operations. The cut material simulation for the entire MOp Set is shown. Scott begins with a Hole Pocketing operation identified as Hook and Through Hole Pocket in the Setup tree using a ½" diameter compression bit. After a short linear approach, Hole Pocketing produces a helical motion to clear the hole diameter. Scott has specified three cut levels each with a complete 360-degree cleanup pass. The illustration from the Cut Parameters Hole Pocketing dialog is shown here.



Following this is Letter and Numbers Engraving. This is used to engrave identifying marks on each component using a ¼" dia. end mill. Then Dado 2½ Axis Pocketing is used to clear the ¼" deep dados on both ends of each component using ⅜" dia. end mill. The last two operations are Profiling cuts using the ½" diameter compression bit.

The first is a Rough Profile pass that leaves 0.03" of stock on the side walls that is then removed up by the second Finish Profile cut. A close-up of the toolpaths for this sheet is shown in the image below. [Watch a time-lapsed video](#) of the sheet being cut on Scott's Techno CNC Router.

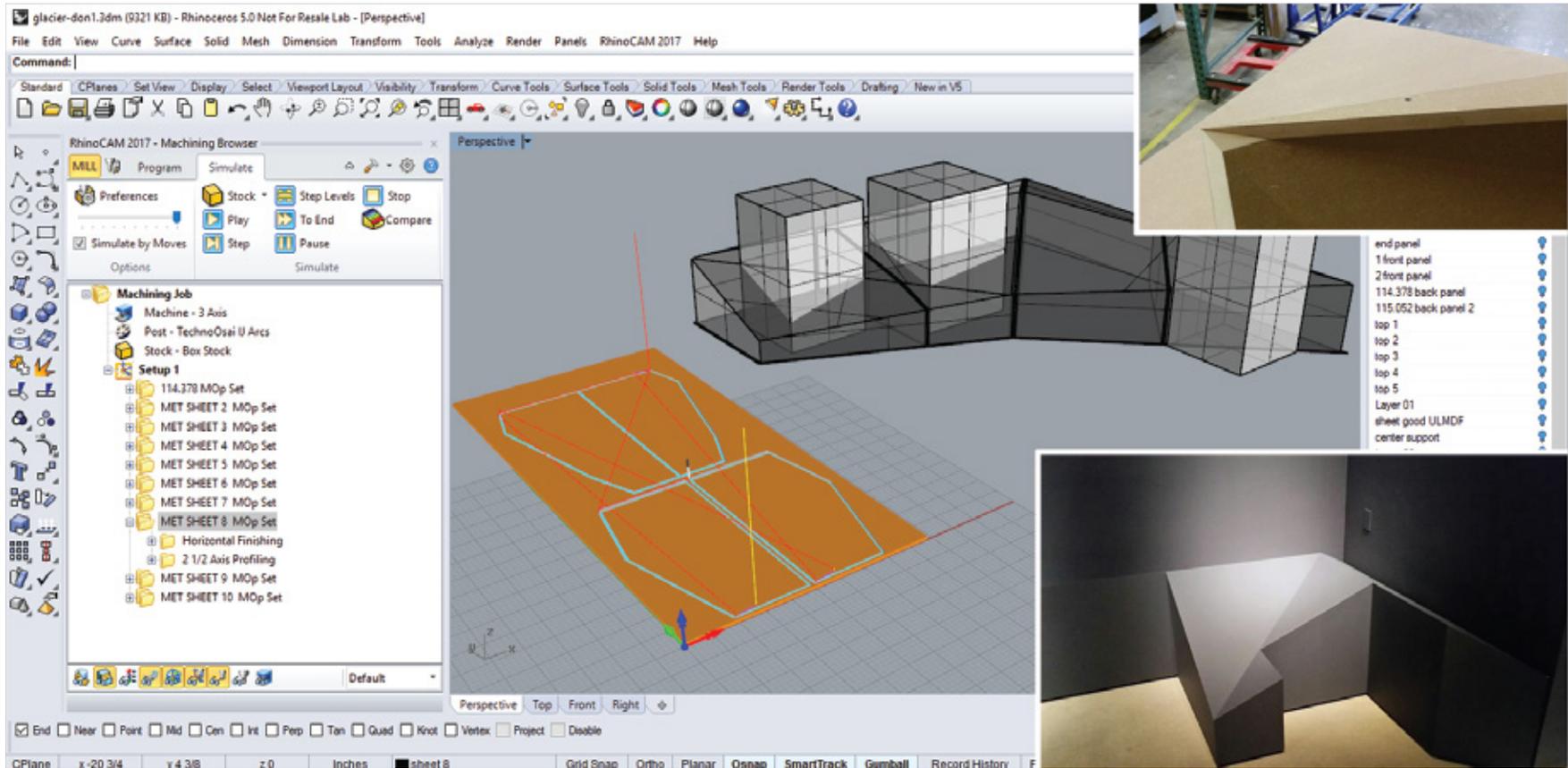


A close-up view of the cut material simulation for Sheet 2 MOp Set shows the Hole Pocketing, Pocketing and Profiling operations in detail. **(Bottom Right)** Sheet 2 is being machined on Scott's Techno CNC Router from RhinoCAM toolpaths ([watch the time-lapsed video here](#)). **(Top-Right)** The assembled components are shown on the workbench.

## The Glacier Exhibit

In this next project, Scott is constructing a series of exhibition displays meant to emulate a glacial effect. The design incorporates openings for rectangular pedestals of varying heights. Each pedestal will support an item for display. In the screen image below, the cut material simulation for MET SHEET 8 MOp Set is shown in RhinoCAM. Scott uses 3 Axis

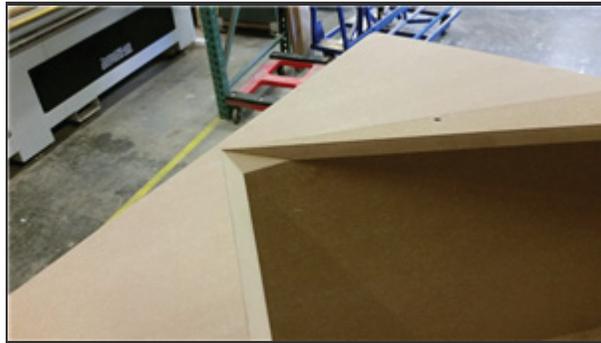
Horizontal Finishing operations with a  $\frac{3}{8}$ " ball mill at a step down of 25% (of the tool's diameter) to cut the beveled edges (shown inset top right below) of each panel, achieving the exact fit required for the design's seamless construction.



The Rhino 3D model for this exhibit's seamless construction is shown in the background. The cut material simulation for SHEET 8 is shown in the foreground. Each sheet has its own MOp Set listed under Setup 1 in the Machining Job tree in the RhinoCAM Machining Browser on the left. **(Top Right)** Here we see the results of the 3 Axis Horizontal Finishing cuts performed on the beveled edges of each sheet. **(Bottom Right)** One of the exhibit's configurations is shown after construction.

The exhibit's multiple configurations are shown in the series of images below. Notice the precise fit of the angles of each panel produced by RhinoCAM's 3 Axis Horizontal Finishing

toolpaths. The high degree of precision is required for the design's seamless construction.



A



B



C



D

In this series of images, we see in image A, the seamless construction technique Scott achieved using RhinoCAM's 3 Axis Horizontal Finishing toolpaths. In images B, C and D, we see three different configurations of the final exhibit's design.

## The RhinoCAM Difference

RhinoCAM helps Scott fabricate his designs with the quality, precision and craftsmanship he demands from all of his tools. RhinoCAM's ease of use, low cost, and high performance affords

Scott more time to concentrate on getting his projects done. That's what it's all about!



*I work with a lot of shops, and everywhere I go I recommend RhinoCAM, and I'm seeing more and more shops using it. Also, what I like about MecSoft is that you are constantly answering user's needs and enhancing the software. I also really appreciate that your technical support helps me out so much!*

- Scott Hoefer, Owner/Operator, Insight Exhibits, LLC.



## More about Insight Exhibits

Insight Exhibits, LLC brings over two decades of creative talent, skilled artistry, practical knowledge and experience to producing museum quality exhibits. For more information and to see more of their cool projects, Scott invites you to visit their website at <http://www.insightmuseumexhibits.com/>.

## More about RhinoCAM

RhinoCAM is available in 4 different configurations (Standard, Expert, Professional, and Premium). The part shown here was programmed using the Professional configuration. Here are some additional details about each of the available configurations. [Click here](#) for the complete features list.

- **RhinoCAM Express:** This is a general-purpose program tailored for hobbyists, makers, and students. Ideal for getting started with CAM programming. Includes 2 & 3 Axis machining methods.
- **RhinoCAM Standard:** This is a general-purpose machining program targeted at the general machinist. This product is ideal for the rapid-prototyping, hobby and educational markets where ease of use is a paramount requirement. Includes 2-1/2 Axis, 3 Axis, and drilling machining methods.
- **RhinoCAM Expert:** Includes the Standard configuration plus 4 Axis machining strategies, advanced cut material simulation, and tool holder collision detection.
- **RhinoCAM Professional:** Includes the Standard and Expert configuration plus advanced 3 Axis machining strategies, 5 Axis indexed machining, machine tool simulation, graphical toolpath editing and a host of other features.
- **RhinoCAM Premium:** Includes the Standard, Expert and Professional configurations plus 5 Axis simultaneous machining strategies.

To read more about RhinoCAM and other MecSoft Corporation products including screen images, resources, and features lists, please visit our [Product page](#). You can also [demo our products](#) to take them for a test drive.