

MecSoft Corporation

18019, Sky Park Circle, Suite K,L
Irvine, CA 92614, USA

PHONE: (949) 654-8163
E-MAIL: SALES@MECSOFT.COM
WEBSITE: WWW.MECSOFT.COM

Cleveland Institute of Art – From Art to Part to Pope

Matthew Hollern was a student at the Tyler School of Art when his class became the first in the country to be taught CAD/CAM technology in a jewelry design master's program. The lessons he learned back then did not fall on deaf ears. From 1989, when he joined the Cleveland Institute of Art faculty, until 2001, shortly before he became the Dean of the Craft Environment, he spent a good portion of his time at trying to put together a complete CAD/CAM system for teaching jewelry design and manufacturing. Sure there were a lot of potential candidates, but Professor Hollern was looking for something that was feasible pedagogically and economically both for the school and ultimately for the individual graduate (in academia, this also means fundable). Then in the summer of 2000, McNeel and Associates, makers of Rhino 3D modeling software offered a workshop for jewelry designers, hosted by Roland, makers of desktop milling machines. This is where he first became aware of a CAM product from MecSoft called VisualMill, which was taught on the final day of the 5-day workshop. Seeing how well the three products worked together, Professor Hollern decided that he could bring the same tools to the Cleveland Institute of Art, so he wrote up a grant proposal. Within a year, the grant was funded and the Professor purchased the Roland MDX 550 as well as lab licenses for VisualMill and Rhino.

First "Minor" Project

Not long after everything was set up, in the fall of 2001, a representative of John Carroll University, located in a Cleveland suburb, contacted the Institute to see if someone would be interested in designing and manufacturing a new award that they wished to present to Pope John Paul II, called The Global Champion of Freedom Award. Professor Hollern accepted the project and began to design the award with his wife, Pamela Argentieri.

While he had been learning the CAD/CAM system for the past few months, this would be the first finished project Professor Hollern would attempt with his new package. He and Pamela started with paper models and conceptual designs in Rhino, and eventually created prototype models in foam, wax, wood and aluminum using the Roland mill driven by VisualMill (see figure 1). He also used VisualMill to machine the actual base of the award – which had a bronze history plate engraved and seated in the bottom of the pewter base.



Figure 1 – This image shows an early wax prototype of the award created by Professor Hollern and Pamela Argentieri, and machined with VisualMill.

The top of the award was fabricated and gilded with 24K Gold leaf (see figure 2). At times he needed technical assistance from VisualMill, and recalled one instance when the president of MecSoft called him from home on a Saturday to help get him through a quandary. "That's what I call customer service," noted Professor Hollern, adding that the other times when he needed the assistance of technical support, someone was always very helpful. They must have been, because within a few weeks the award was manufactured (see figure 3) and he and his wife were at the Vatican to see the presentation of it to the Pope in December 2001 (see figure 4).

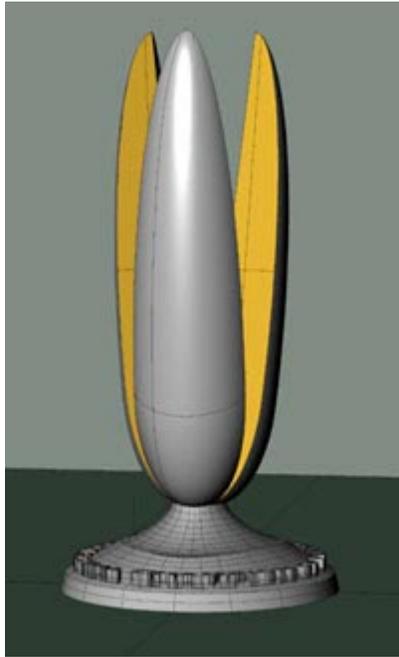


Figure 2 – In a short time period, design of the award progressed to this stage, which is close to its final appearance.



Figure 3 – The final award as manufactured in VisualMill.

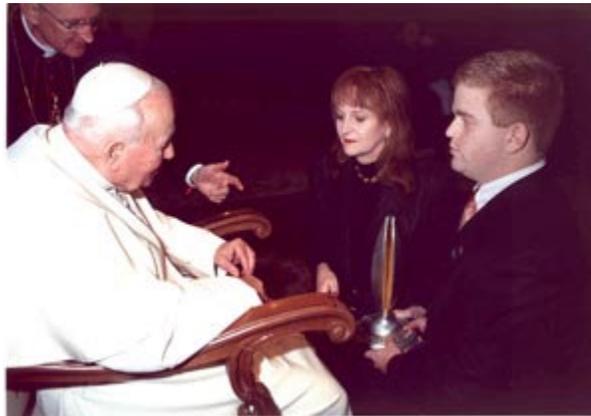


Figure 4 – Professor Hollern and his wife went to Rome to present the award to the Pope in December of 2001.

A New Way to Craft

Since that dramatic first project, Professor Hollern has continued to work VisualMill into the courses that he teaches at the Cleveland Institute of Art. Currently he is teaching his students to make molds and cut finished parts with VisualMill and says that "the students have taken to it pretty well – they understand the program's different parameters including the different types of cutting strategies, materials, cutters, and so on."

"While craftsmen working in materials like ceramic, glass and metal have always been associated

with using their hands, I find it exciting and provocative to say that you don't really need your hands – the design comes from the head. Some are troubled with this and, frankly, I'm glad that they are. But the point is that the arguments in class are about design and how to create good design – not about which software command to use," he said.

"When you see a crafted object you have a sense of the time period that it came from – and it should be the same with digital tools. The only difference is that the bits and bytes are the medium and you are manipulating it in a different way," he added. Professor Hollern gave an example of this – how one student's design was influenced by a toolpath pattern that VisualMill displayed on the screen (see figure 5). The Professor explained, "some toolpaths are quite beautiful – so much that they actually become part of the ornamental design. Basically the patterns become decorations, thus allowing the process to be seen and expressed. It speaks about how it came about, which is what contemporary craft can do."

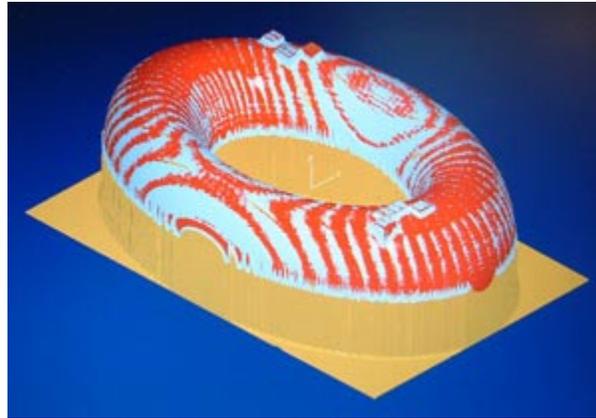


Figure 5 – Toolpaths that VisualMill created inspired artistic details for some of the students at the Cleveland Institute of Art.

The Results

It is always said that if you enjoy what you do, the results will show up in your work, and this has been the case at the Cleveland Institute of Art. The Professor talked about students who have won scholarships based on designs they created since this system was introduced (see figure 6 and 7). "In fact, in the first semester of using this technology, from an entire graduating class of 98 students, in which there were only three from my department, two of them finished in 1st and 3rd place for a post-graduate travel award," he said proudly (see figure 8). Professor Hollern concluded with these thoughts: "I am not teaching VisualMill, I am teaching jewelry design, with VisualMill just being one of the tools. I am not trying to turn them into machinists, and because VisualMill is so easy to use, it doesn't have to become the subject of an entire class." Now if only more teachers had this philosophy and the tools to back them up, perhaps more students would be interested in careers in design and crafts, rather than just sports and law.



Figure 6 – Detail of design from student Kyle Bradford that was machine with VisualMill.

Figure 7 – Collection of student designs created in Professor Hollern’s jewelry design and manufacturing class at the Cleveland Institute of Art.



Figure 8 – Students Land and Wuttig won an award at the Cleveland Institute of Art for their design of this puzzle, seen here.