

# GOD IS IN THE DETAILS

Acropolis Studios speeds time to market for McVan's religious pendants

When McVan Inc. in Attleboro, Massachusetts, wanted to add 10 new 3/4-inch medallions to its Chapel Jewelry line of pendants depicting Catholic saints, it knew that it didn't have time to wait for the highly figurative pendants to be produced by traditional processes. By using conventional methods to produce the tooling required to die strike the pendants—either hand-carving the models on a larger scale in clay then using a duplicating machine to reduce them down and cut them into steel, or designing the steel tooling for the medallions at actual size—the time and labor required would be unable to support the retail price of \$34.95 that the company was targeting for each sterling or pewter pendant.

In an attempt to find a faster, highly precise method of producing the tooling, the company turned to Acropolis Studios in Cranston, Rhode Island, a product design service bureau. Owner Jill Kenik

used an all-digital design and production process including FreeForm, a sculptural CAD 3-D modeling system from SensAble Technologies that integrates haptics (touch-enabled technology), to complete the project in a timely fashion. Instead of the four-to-five-month design time frame that McVan had anticipated for the project, Acropolis was able to go from concept to tooling on the 10 medallions in less than six weeks, which significantly cut McVan's time to market.

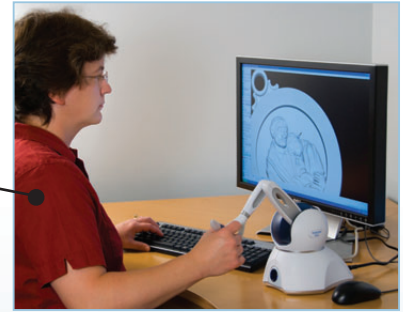
Kenik began the project by researching paintings and Christian symbols associated with each saint. She made either a rough sketch on paper or digitally (using Poser, a human figure modeling software program), and then imported the sketches into FreeForm to sculpt exacting facial and garment details that were critical to conveying the persona of each saint. When the pendant designs were complete with borders and lettering, the Acropolis team generated the g-code for milling. They used a

CNC mill to create samples in high-density urethane, adding antiquing details to the urethane parts. When McVan approved the samples, Acropolis delivered the milling files to its toolmaker to be milled directly as steel dies.

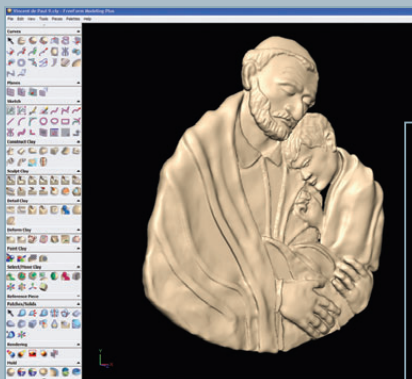
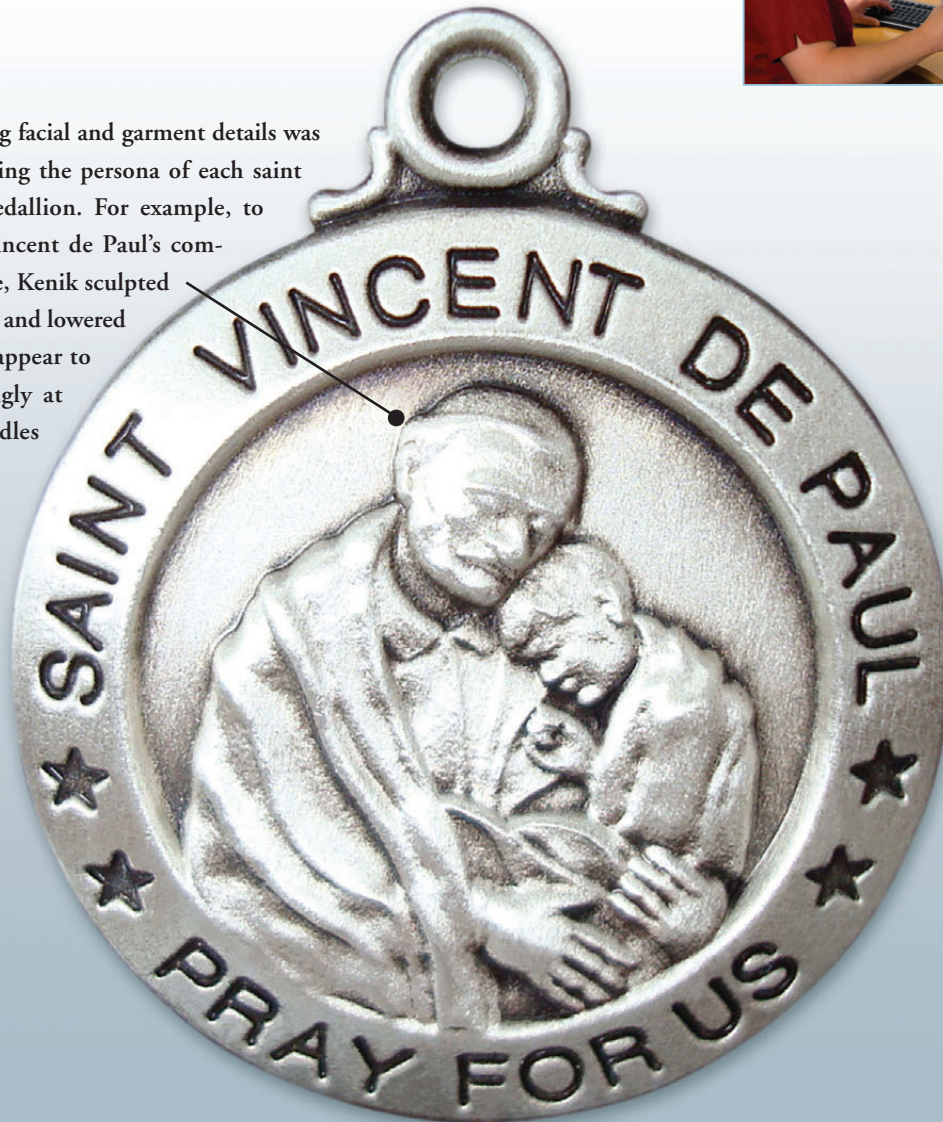
The new medallions arrived in stores in early 2009, packaged for individual sale and in boxed sets of prayer cards and pendants. Fred Adler, president of McVan, says the new saint medallions delivered significantly stronger sales than he had anticipated, and even helped the company broaden the number of stores that carry his full line.

"When customers browse in a store, jewelry must catch their eye quickly or the sales opportunity is lost," says Adler. "The detail of Jill's medallions was so exceptional and of such high quality that even pendants of these lesser-known saints sold well. The quality and detail alone helped us to attract the customer, which means we're helping our retailers as well."

“FreeForm helps me to create complex, organic shapes and intricate details and textures,” says Kenik. With this system, the user designs by touch, using a force-feedback haptic device instead of a computer mouse. Kenik and her designers literally “felt” the models of the saints come to life as they sculpted them in large scale on a computer screen and then reduced them to the precise size needed without losing sculptural detail.



Sculpting exacting facial and garment details was critical to depicting the persona of each saint in a 3/4-inch medallion. For example, to emphasize St. Vincent de Paul’s compassionate nature, Kenik sculpted his facial features and lowered his eyes so they appear to gaze down lovingly at the child he cradles in his arms.



With traditional methods, making subtle adjustments to the saint’s features to enhance realism, such as a different curve of the nose or more rounded cheeks, is time-consuming. In physical clay modeling, changes require adding clay to build up the figure, reshaping and remodeling it, and reducing it again. With metal tooling, any change requires either patching and modifying, which is difficult, or discarding the original and beginning anew. Using FreeForm, Kenik can make quick changes to the digital model and then export it for milling. ♦