

Designed with



FOR FIVE GENERATIONS, the Phillips family has farmed the area around Lodi, California, and today its Michael David Winery is a critically acclaimed producer of Zinfandel, Chardonnay, Petite Sirah and Syrah.

Recently, the winery worked with Tony Segale to design and Danny Baronian to build new signage for its tasting room, café and grocery on Highway 12.

The resulting creations bring the winery's logo, two corkscrews with their blades crossed, to life as 3D objects. Baronian Mfg built the signs by modelling Tony's designs in ArtCAM computer aided manufacturing software and then cutting them out on a computer numerical control (CNC) router.

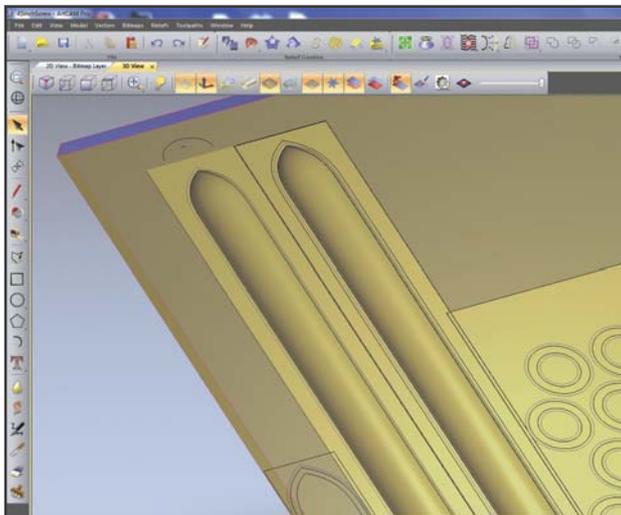
For the largest signs, Baronian Mfg saved time by cutting a model of the corkscrew on a router and using it to make a silicon rubber mould that was used to cast the 3D design.

The "Michael" and "David" in Michael David Winery are Michael and David Phillips, two brothers whose family has cultivated wine grapes for nearly a century. Today Michael David Winery has extended itself to the sixth generation of grape growers in the family, with Kevin Phillips and Melissa Phillips Stroud now joining the family business. Originally devoted to vegetables, the Phillips' farm evolved to include many different fruits, including 15 different wine varietals that were shipped throughout the country during prohibition with instructions on "how not to have the grapes turn into wine".

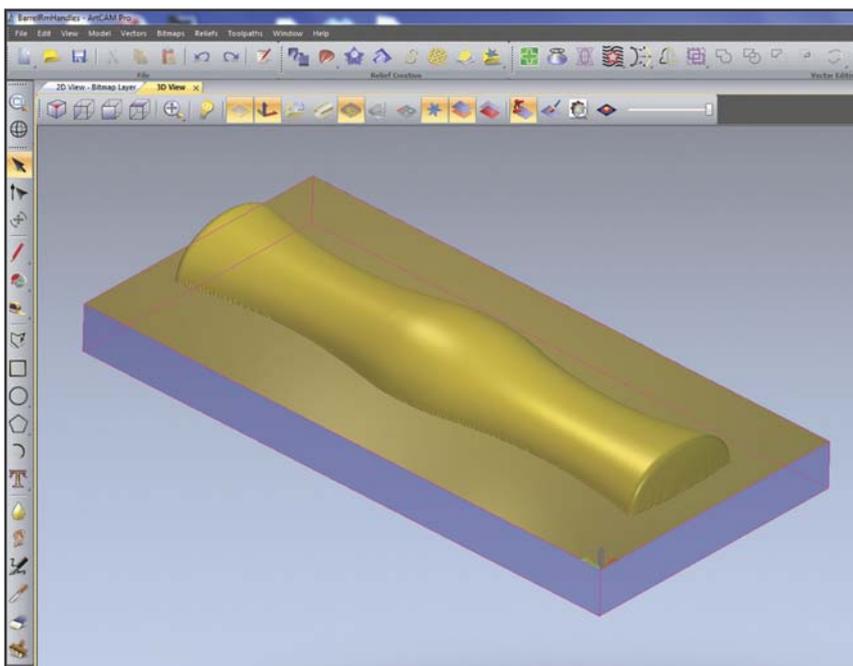
Among many awards received by the winery, its Earthquake Petite Sirah was awarded Gold medal, best of class winner in the San Francisco Chronicle Wine Competition.

Tony's company, Segale's Fine Art and Gold Leaf, was contracted by the winery to create a unique design that would burnish the winery's image and attract highway drivers. Segale developed his concepts as a series of 2D drawings for eight 2 ft high by 6 ft long roadway signs and two 7 ft by 7 ft building signs.

The image of the corkscrew was provided by the winery as a line art drawing. Baronian Mfg scanned and vectorised the image, then imported it into Art-



Creating the helical section of the corkscrew.



Using the revolve function in ArtCAM to create the 3D shape of the corkscrew handle.



Mould used to cast the corkscrew handles.

ArtCAM: unique 3D signs for Michael David Winery



CAM. He extruded the corkscrew online into a half circle so that in a profile view the image looked like a 3D view of a corkscrew. He used ArtCAM to generate a program for his CNC router, cut out a section of the corkscrew, painted it and presented it as a sample. The client liked the sample and told Tony and Danny to proceed with building the signs.

Danny then proceeded to work on the roadway signs. He defined the 24 in long handles of the corkscrews by first creating a line that defined the lengthwise profile he wanted for the handle. Then he used ArtCAM's Revolve function to extrude that profile radially around an axis to create a 3D shape. The Revolve function is analogous to turning the part on a lathe. Danny could have cut the 18 handles needed for the eight signs out of wood on the router, but he felt he could do the job in less time by casting the handles instead. So he cut one wooden handle on the router, painted and primed it, and put it in a mould box. Then he poured liquid silicone rubber over the pattern to produce a firm but flexible room temperature vulcanisation (RTV) mould. He removed the mould from the box and used it to cast the 16 handles from urethane thermoset material.

Baronian Mfg used an interesting approach to making the corkscrews for the roadway signs. Again, these could have been cut out of wood but Danny had an idea to utilise the flexibility of ArtCAM to make them faster while using less material than would have been required in routing them out of a solid block of wood.

For the roadway sign he defined the cross-section of the corkscrew as a half circle. He used a half-circle because it would look exactly the same in profile view as a full-circle and a half-circle would be easier to build. Then he extruded the cross-section in a straight line to create an unfolded version of the corkscrew. He cut the straight section of the corkscrew out of a thermoset plastic material on the router, then heated the resulting piece and bent it around a plastic pipe to create the helical section of the corkscrew. The cylindrical section of the corkscrew was simply made from pipe.

Baronian Mfg then used a JPG image of wood with the right weathered look for the background of the roadway sign. He converted the image to grayscale. He imported the image into ArtCAM and converted it to 3D basing the height on the grayscale with lighter areas being high and darker areas being low. He used the smooth relief feature and sculpting tools to touch up the image. He used the resulting surface to produce a program for machining the surface of a

high density urethane panel and then painted the panel to provide a weathered look. He defined the letters using ArtCAM's Text Tool and added a prismatic shape using the Shape Editor tool. He then generated a CNC program and machined the letters on a router with a ball nose end mill.

The building signs were produced using mostly similar methods. Baronian Mfg produced the handle for the corkscrew on the building sign by defining it in ArtCAM using the same methods as described for the roadway sign handle.

Danny tweaked the geometry of the larger version for the sign several times until it looked exactly right. But because the handle was smaller and he only had to build two building signs he cut the handles out of wood on a router rather than moulding them. He produced the corkscrew for the handle using the same method that he used to produce the sample corkscrew. He built the letters and put a weathered look on the building signs using the same approach that he used on the roadway signs.

"The signs look great and the client loves them,"

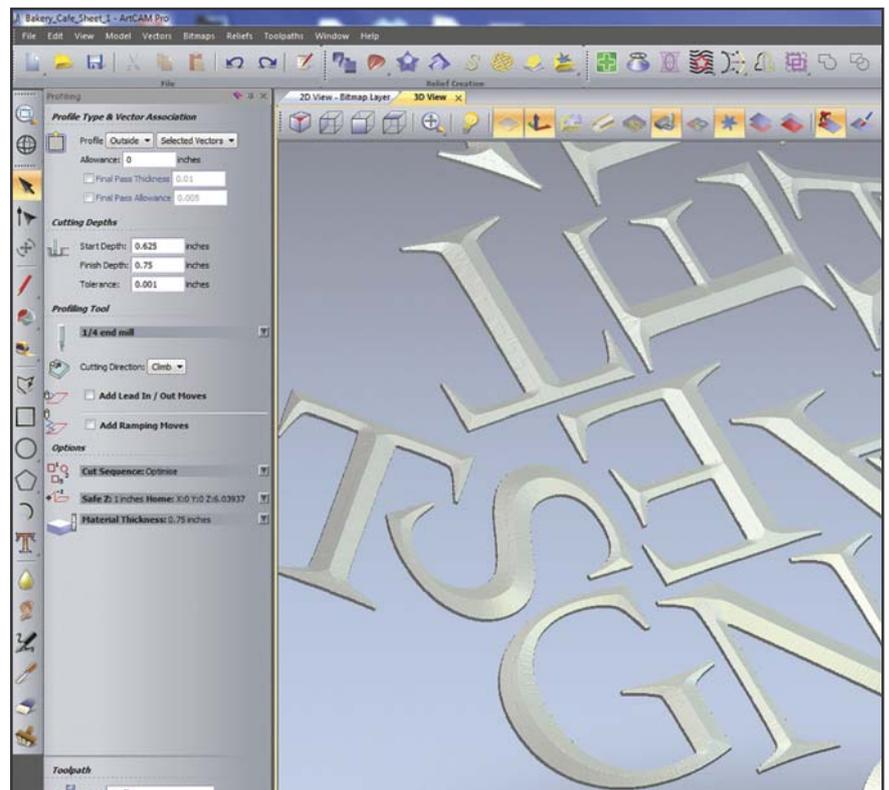
Danny concluded. "This is an excellent example of how working with ArtCAM helps us build beautiful signs. ArtCAM provides an extremely wide range of tools that give us the ability to quickly and easily define nearly any geometry that anyone would want to use on a sign.

"ArtCAM also gives us the ability to efficiently produce anything that we can imagine on a CNC router. By taking advantage of ArtCAM's tools we can continually produce interesting and unusual designs that exceed our clients' expectations.

"The flexibility of ArtCAM also opens up other markets to expand into including woodworking and the art field. When someone walks in the door with a project for me to bid on, I have a high level of confidence that I will be able to design it and generate a program to quickly and efficiently build it on my CNC router with ArtCAM."

Delcam

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Letters created using ArtCAM's Text Tool and the Shape Editor tool.