

Technology



Quick set-up — In this kitchen, employees of Mountain Tops placed markers on cabinet edges and adhesive markers on the walls. A scale, which the system uses for reference, is on the right.

Cornered — Note that the adhesive markers in the corner are touching, which helps give the system a higher level of accuracy.



On-site measuring made easy

Software enables users to measure for countertops and stair parts with speed and accuracy

by Ken Jennison, Associate Editor
kjennison@chartcomm.com

You arrive at a jobsite where you need to make a countertop template. You quickly put some markers and stickers around the edges of the cabinets and on the walls and take some photos. Then you download the photos on-site into your laptop, launch a software program, and within an hour, a CNC router is cutting the countertop.

Sound far-fetched? It's not.

In fact, Keith Layton, owner of Mountain Tops Solid Surface

Creations Inc., in Hayesville, N.C., has become so used to drawing a crowd of on-site spectators when he uses the system that he has a prepared speech to explain how it works. "It uses algorithms to figure spatial geometries. It triangulates the positions of the markers that you place in the job, and then when you take photographs of the markers from various angles, it processes them," Layton says. "That usually gets them to go away," he laughs.

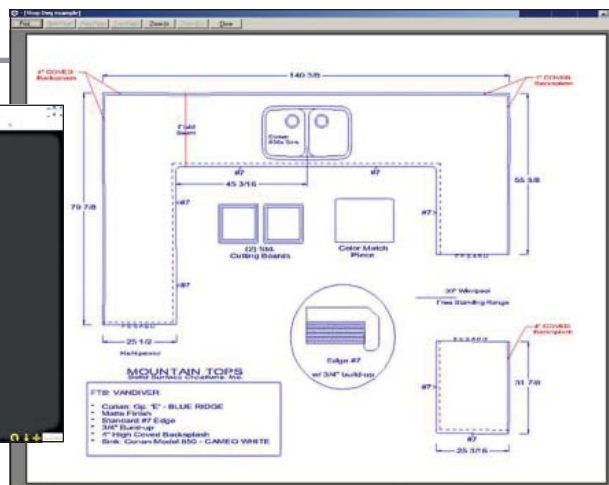
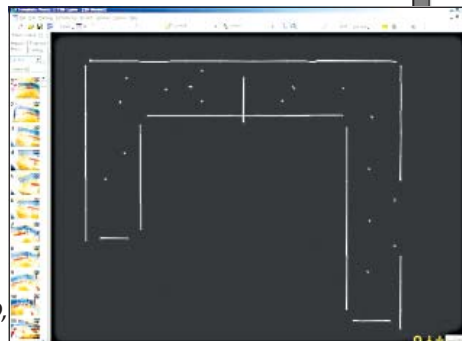
Layton admits that the software, ETemplate Photo by Raleigh, N.C.-based ETemplate System, is complicated in what it does internally, but he says it's easy to use. "Most of the new guys we train on it want to make it harder than it is."

And while ETemplate Photo was developed with countertop makers in mind, several forward-thinking shops realized that the system could do even more — namely, create extremely accurate drawings for

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Photos to ETemplate — After the system processes the photos (seen at left side of screen), it creates a 3D view of the area.

On to CAD — After ETemplate generates a 3D view of the area, the information can be downloaded into AutoCAD, and a drawing created.



curved stair parts.

Mountain Tops is a nine-man shop and has been using the system for about four years to fabricate solid surface tops with a MultiCam MG series CNC router. Mountain Tops also uses the system to create CAD files for another shop that fabricates engineered stone tops on Mountain Tops' behalf. There is a learning curve, Layton says, but his shop moved through it quickly.

Working with countertops

Prior to using ETemplate, Layton's shop used 1/8-inch luan strips and hotmelt for making templates. They would then bring those in and scan them on their CNC router, which Layton says was time-consuming. Furthermore, Layton was concerned that they were essentially making a copy of a copy and accuracy was suffering. After about a month of using ETemplate, Layton's shop quit using

hard templates altogether. By using ETemplate, Layton says he's been able to get the accuracy of his templates to as much as ten-thousandths of an inch.

Bonus uses

Layton notes that the system also has worked out well in some unexpected ways. "We've had instances where people have moved cabinets after we've templated and then

denied it, and we say 'We've got a photograph that says you did.' "

In addition, Layton's templaters use the photographs to document the condition of a jobsite when they first arrive. If an appliance has been scratched or other damage done, they have photographic proof that they were not the ones who did it.

The photos also help Layton's installers. On the morning before an install, they can pull up the job photos and know what they're walking into before they go to the jobsite.

Shop impact

The system has become an important component in Layton's shop. "For us, it's a very good way to accurately gather information in

a very minimal amount of time, so we can then process that information and make countertops that fit. When we take the jobs out, they pop right in," Layton says. "If the walls bow in and out, then we make the tops bow in and out, it's the way

ETemplate tells us to. And they fit."

Since Mountain Tops covers a large rural area, the time saved is another important aspect of the program, Layton says. Less time spent at a particular jobsite means that his men are able

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How it works

ETemplate Photo is a user-friendly system. For countertops, the user places markers on the edges of the cabinets, and adhesive markers along the walls around the cabinets. If the walls nearby are curved, then continuous adhesive markers are applied to avoid the need for scribing later.

Each marker has four tick marks for edge alignment. A special gauge is used for measuring over existing countertops. Scales are placed every eight to 10 linear feet within the area.

Photos are then taken of the markers from at least two angles. An average job requires eight to 12 photos. Once the photos are taken, the user downloads them into a computer and the ETemplate software processes the photos and creates a CAD drawing of the template that can be downloaded directly to a CNC router for cutting.

The procedure for creating a template for curved stair parts is similar, with the main difference being that many more adhesive markers are used, and they are placed just a few inches from each other.



A perfect curve — Chris Morley of Royal Oak Stairs uses the ETemplate system for accurately measuring curved stairwells so he can create the various stair components.

to get to more jobs in a day.

Making it work for stairs

Like Layton, Chris Morley also battles the time and production issue even though he is in a different industry — stair part produc-

tion. Morley is the owner of Royal Oak Stairs Inc., a 14-man shop in Raleigh, N.C. For Morley, the time spent measuring and re-measuring used to require multiple job visits. Then at the end of 2005 Morley saw the potential of ETemplate for his

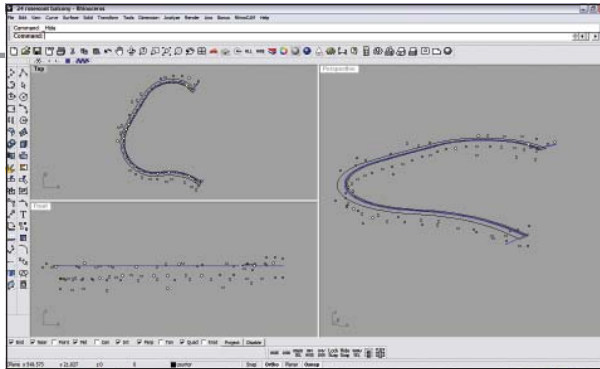
work and purchased a copy.

“I do a lot with curved stairs and radius landing tread, so when a framer frames, the wall might meander a little ways,” Morley says. “With ETemplate I can get an accurate picture of the way a wall moves and make a better flowing line and compensate with what’s gone bad with what the builder’s done.”

The complex gets easy

Morley especially likes the fact that it makes complex aspects of his job easy.

“Say for instance I have to build a flat radius and I have to cut it out of a piece of plywood. You’ve got underneath the stair, and it twists at the same time. Now if you take that and lay it flat, it’s a completely different radius because it’s on an angle and it’s twisted. So instead of



Points to remember — *ETemplate processes the photos Chris Morley took of the balcony area and generates multiple view drawings.*

going there with some cardboard and templating it out, you can do it with ETemplate. It does it all on CAD, and you then can process it to where a CNC can cut everything out for you, and when you put it back, it fits perfectly."

Morley likes to sit outside a jobsite in his truck and process the project on his laptop. After he's done, he gives it to his workers at the shop



Balcony view — *By using a large number of ETemplate markers, Chris Morley is able to produce an extremely accurate balcony rail.*

who run it through the CNC. "I can just let them get on with it," Morley says. "Then that's one thing I don't have to worry about anymore.

"It's a pretty intense program," Morley adds. "There's probably a lot more to it than I see." □

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