# High Quality for High Security



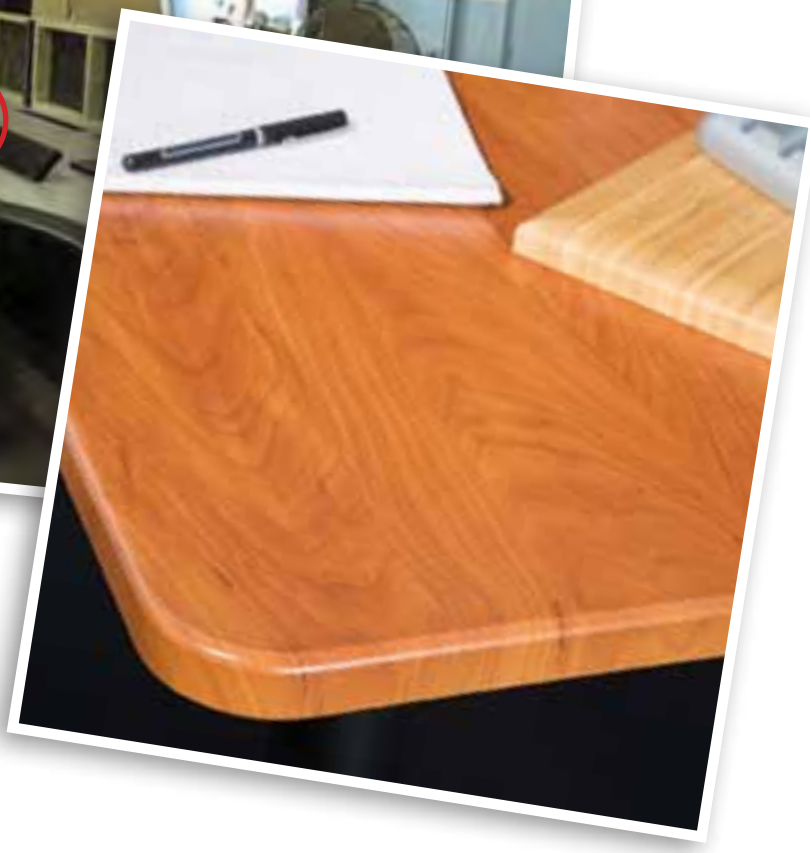



TOP SECRET



BY SUZANNE VAN GILDER

It is difficult for Michael Figiel, Vice President of National Millwork. Inc. to produce a portfolio of some of the company's most innovative work. In fact, unless a person has a very high level of security clearance, he or she will never see that work. The company, located in Madison Heights, MI, does a lot of work for the Federal Government, and not just any old office space. National Millwork's background in historic restoration coupled with its reputation for fabricating high-quality custom components with the latest engineered materials has earned it some extremely low-profile jobs. Hush, hush, top-secret spaces. Several of the United States government's most secure offices, including The National Terrorist Operations Center, the Command Center for the National Security Agency/ Central Security Service and President Obama's Communications Center are finished with National Millworks' work. At least that's the word on the street. Few people have actually seen the installations. Figiel, who is in charge of engineering shop management and project development, runs the company with his brother Dennis Figiel. They recently finished a custom installation for the Special Ops room at Fort Belvoir, Virginia.



To bid this type of specialty work National Millwork had to become a U.S. GSA (General Services Administration) schedule contractor. According to the GSA, "GSA awards contracts to responsible companies offering commercial items, at fair and reasonable prices, that fall within the generic descriptions in the GSA Schedule Solicitations." This type of work both places some restrictions on the vendor, and provides opportunity for creative freedom. "They give a concept of what they need and some of the requirements, then I have to design the product and pick the materials that will perform best in that area," says Figiel. "I am lucky to get that option, it is a great expression of creativity, but it is also a great expression of engineering."

## REQUIREMENTS

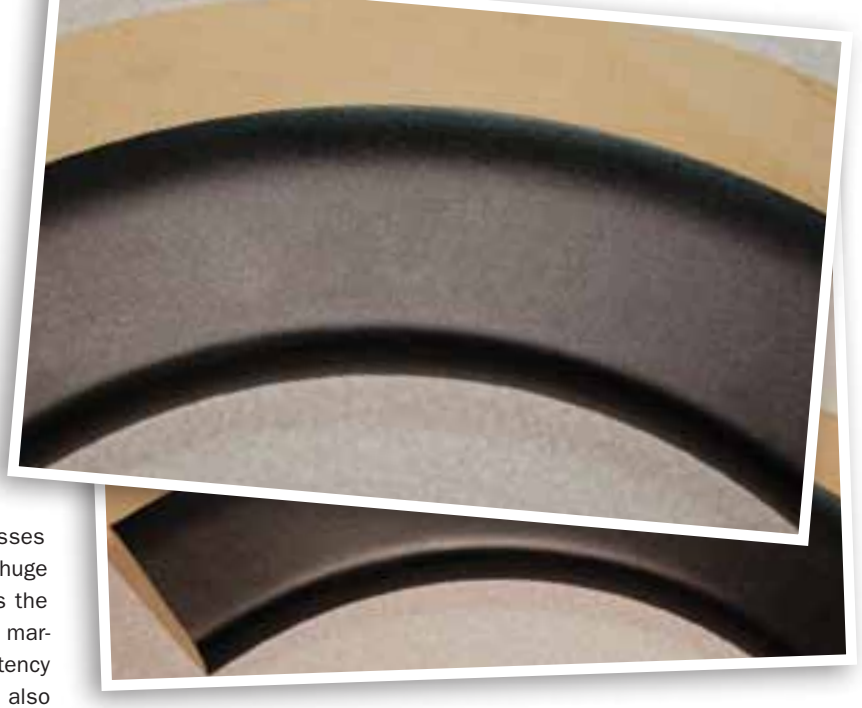
One of the projects that National Millwork completed for the Special Ops room included specialized consoles designed to accommodate anywhere from 15-60 people who come together in situations where they all have to interface (yes, that is vague, but it is national security). "These consoles that we built are about six feet wide," says Figiel. "They include three or four flat screens mounted on a metal slatwall bracket in the back, and they have three or four towers set in for different functions. They are usually in some form of a line."

Every project is unique. "We do so much specialty stuff, it is not like we build a basic cabinet. There are plenty of people who can do that," says Figiel. "Take the consoles shown on TV when they were tracking Osama Bin Laden. Those are the types of things we build. They sometimes run at a 70 foot radius with curvature along the edges." However, there are some requirements that stay the same for all GSA work. For one thing, all of the materials and products used must be made in the USA. Everything also has to come with a lifetime warranty, which is considered to be 25-years, though pieces are often re-purposed after their initial use. ADA compliance is becoming the standard, so most flat surface products include Linak® acuators to make them height adjustable. And then there is security. "When we fabricate this stuff and send it off, we can't take pictures, and we never see the work again. Our installers are escorted around with federal marshals. It is really high security and the clearance is unbelievable," says Figiel.

## BUY AMERICAN

To win a bid National Millwork looks at a project's requirements, designs the piece in shape and material, gets quotes from any component manufacturers and then turns their bid over to the GSA. Figiel has developed a working relationship with JB Cutting, a thermoforming company located in Mount Clemens, MI, to do contoured and profiled pieces. "I have a lot of fun looking at the machines to see what I could do with them," says Figiel, referring to JB Cutting's Wemhöner membrane press. "And their results are too nice to describe. Vacuum forming is terribly essential in producing a seamless product. Some people see what is presented, but with this kind of non-standard work you have to think outside of the box to see how to apply processes to what you need." With 20 employees JB Cutting is not a huge operation, but it is a very versatile operation. "Our agility is the reason why we are growing," says Nathan Klomp, sales and marketing manager for JB Cutting. "We have a good core competency at driving high-volume and being cost effective, but we are also able to turn around custom jobs quickly. We don't have process rules or limits and we don't say 'no' very often."

For the Special Ops project the consoles were designed to have a curved profile terminating in a knife-edge. The exterior is generally inlaid HPL while the top cap and edges are 3DL. "All your extreme areas have to be protected, because usually when these rooms are in operation it is pretty frantic. You have to provide a product that can take that type of abuse," says Figiel. To provide the durability required for the edges, Pentadecor® kpExtreme™ 3D laminate was specified for the edges. "If you use plastic laminate, it chips and breaks. Other materials tend to scar or mark when things are passed over it," says Figiel. "The kpExtreme is very cool, very durable. It picks up contours and softens edges perfectly."



## FAIR AND REASONABLE

For the project quote and the first round of production on the Special Ops project, JB Cutting used a standard, commercial grade black 3DL film. But procuring the material in line with the production schedule became a challenge. There were long lead times and minimum order requirements. Then SSI supplied JB Cutting with a relatively new specialty film called kpExtreme. "It is a little better on the surface," says Klomp, "and it is readily available. Plus, despite the durability, it is thinner than the other commercial film, so it is easier for us to work with." JB Cutting sent a sample to National Millwork, where they proceeded to try to scratch, mar, beat up and otherwise destroy the component. "They said it was great, super durable. And that they wanted to use the kpExtreme anytime there was specification for a solid 3DL." The best part? Switching to kpExtreme actually saved National Millwork some money on the project. Any customer likes that. "When there is a specialty item, JB Cutting is one of the first companies I call. They are very good at understanding the concepts of custom pieces, and have the foresight to know how to make things happen," says Figiel.

The kpExtreme is laminated to Plum Creek HDF. "It takes contours really nicely and you get a better edge on it," says Figiel. "Plus it is less porous, so it stays straight longer and doesn't react to the environment like a plywood or a solid wood." Environment is especially important in some of the federal buildings that are heated with steam and do not have humidity control. "In the winter they cut the heat down to 58 degrees F on the weekend, then kick it up again, so there is significant expansion and contraction. The substrate has to be as dependable as the top surface," says Figiel. "With the melamine back the HDF holds up very well. It also finishes well, which cuts down time for processing. If you have to work the panel for two or three hours in preparation, it is not really cost effective."

"You can't work in this market if in the back of your mind you are worried about how the product is going to perform once it is installed," says Figiel. Federal projects make up a large percentage of National Millwork's work, and once a job is complete, there is no going back to fine tune. For high-security installations, quality has to be the primary design intent. s&p