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Computerized Efficiency

From design and sales to the shop floor, computers help jobs move along smoothly at this North Carolina company.

By Hannah Miller

In the showroom of architectural millwork firm Hardwood Designs, intricate architectural renderings of an expanded and renovated William R. Perkins Library at Duke University weigh down a table.

Two other showroom tables similarly support architects' plans — a testimony to Hardwood Designs' practice of juggling several projects at once. For example, if the company is working on one two-month-long job, Hardwood Designs' 20 or so employees typically will have a one-month job and a two-weeks job going at the same time, says president Jan Bouterse. The \$150,000 job at Duke's largest library, a one-year job, includes study carrels, tables and bookcases.

Projects usually range from \$40,000 to \$1.5 million. In terms of organizational efficiency, Bouterse says, "Our sweet spot would probably be half a million."

A lot of the company's architectural millwork has been for Durham, NC-based Duke, including the university's Eye Center, the Fuqua School of Business, the OIT (Office of Information Technology) and now the library. For the nearby University of North Carolina in Chapel Hill, Hardwood Designs has done work for Kenan-Flagler School of Business, the George Watts Hill Alumni Center and the Undergraduate Library. Non-university jobs have included the offices of investment firm Smith Barney in Durham and the American Tobacco Historic District, a former Durham tobacco factory complex that has been turned into retail, office and residential space.

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Working on several good-sized jobs at once takes meticulous planning, and Bouterse says he relies heavily on an in-house computer network devised by the Boutereses' son Brian, a North Carolina

Hardwood Designs
Hillsborough, NC
www.hardwooddesigns.com

Year Founded: 1984

Employees: 20

Shop Size: 12,000 sq. ft.

FYI: The company is owned by Jan Bouterse and his wife, Debbie Kulowitch. Bouterse did woodworking as a hobby in his native country of Holland and pursued it as a career in the United States after college.

State University senior majoring in computer science. Hardwood Designs has eight computer stations: one in Bouterse's office, two in the office of his wife and company vice president, Debbie Kulowitch, three in the drafting offices and two on the shop floor.



An oak conference table by Hardwood Designs dominates this boardroom of the North Carolina Biotechnology Center in Research Triangle Park, NC. Radius paneling on an exterior wall echoes the curve of the table.

Kulowitch, who is majority owner, uses her Quick Books software to help her manage the office. "I watch the money," she says. ACT, a database program, lets Hardwood Designs keep up with its clients by recording e-mail and fax exchanges. Using the computers, Bouterse and two draftspeople create shop drawings. They also write programs for the ShopBot CNC router, which are then electronically transmitted to the machine on the shop floor.

Perhaps the most crucial use of the computers is in scheduling and tracking jobs. When a client has approved Hardwood's preliminary drawings and "submittals" — samples of wood, cabinet tops and the like — Bouterse enters the timeline for the new job both in the computer network and on chalkboards in his office and the shop, adding it to the list of other jobs already in progress. He enters the end date first, then works backward, giving

estimated times when each phase should be completed, from cutting and sanding to finishing and installation.

Shop foreman Charles McNeil doles out the weekly workload to employees. Each woodworker signs onto the computer daily, using Time Clock software to show what job and what task he is working on. If he switches jobs or tasks during the day, he notes it. And when he finishes a task, he enters it in the computer.

Bouterse and McNeil confer several times during the week, using employees' computerized records to assess progress. "That sort of gives you a flow," Bouterse says. Once a task is completed, McNeil can mark it off and go on to writing the next week's schedule. "He doesn't have to worry about that anymore," Bouterse says.

Once a job is finished, employees' records give Bouterse an accurate account of a job's cost and help him estimate the next project. Computer scheduling also enables the shop to absorb changes requested by a client during the job. Bouterse expects changes, he says. "It's a dynamic process."

Bouterse also says he doesn't know how shops without extensive computerization survive. "The old days of scribbling on the back of a board are out."

Hardwood Designs does all of its own finishing, and has done since it began 21 years ago. M.L.

Campbell conversion varnishes and stains are applied with Binks and DeVilbiss equipment in an automotive spray booth. "It gives a high quality," Bouterse says.

Shop equipment includes the ShopBot router, a Cemco widebelt sander, a Brandt edgebander, a Rockwell table saw with power feeder, a SCMI Hydro 3200 panel saw and a DeWalt radial arm saw.

Two installers directed by Bouterse do most of the company's installations, though in the case of really big jobs, it contracts with other installers supervised by Hardwood Designs. Bouterse and his supervisor are usually on the job site to troubleshoot. They also have to coordinate their work with a lot of trades, Bouterse says, including electronics installers and electricians putting in the light fixtures.

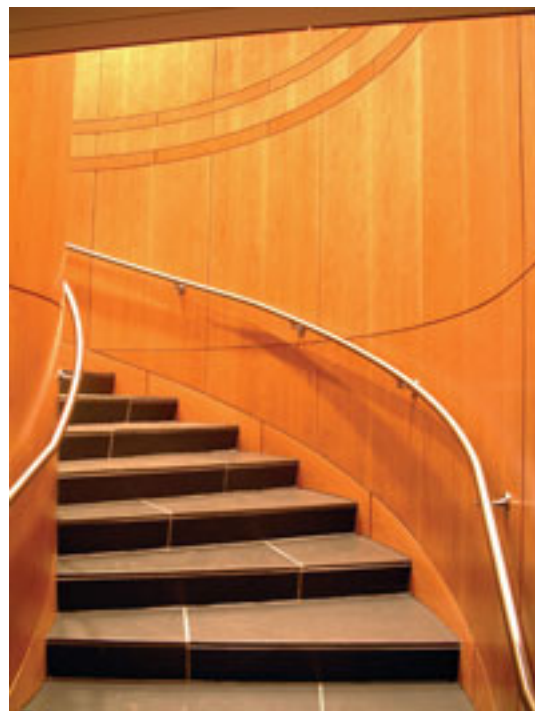
Commercial Jobs Preferred

On the Smith Barney job, Hardwood Designs made a stained maple framework to hold floor-to-ceiling glass that constituted the interior wall of a row of offices. The builder installed the glass.

The design for Duke Eye Center included two circular, two-story surrounds for freestanding elevator shafts meant to be decorative as well as functional. Hardwood Designs stretched sound-dampening fabric between circular bands of anigre.

For one room's acoustical ceiling, the company used its ShopBot to cut hundreds of slots in anigre panels. Shop employees attached an adhesive-backed fabric to dampen sound, using Kulowitch's iron from home. "We're a full-service company," she jokes, but adds that metal, glass and stone work are contracted out.

Hardwood Designs will do the occasional residential job if a client wants something really special. "Cookie-cutter' we don't do," says Kulowitch. But Bouterse says he prefers commercial. "It is more professional. It requires less handholding." In commercial jobs, he adds, the company is giving the client a tool he or she will use to make money. So, "as long as it works, they are off and running.



Cherry is used throughout the Undergraduate Library — in desks, paneling and cabinetry — at the University of North Carolina at Chapel Hill.

"You are not going to be called back to change a knob," he adds, and if a commercial client wants changes, "they pay."



Radius lines are a feature in this desk for the periodicals room at the UNC-Chapel Hill undergraduate library.

Residential jobs have no such cut-and-dried role, Bouterse says. With residential customers, the company becomes more personal, says Kulowitch. With such a personal relationship come more requests for change, Bouterse adds.

Bouterse and Kulowitch, married 25 years, became a professional team four years later when he started woodworking for pay in a side room of their Durham house. "We did stuff for the neighbors," she recalls. "We didn't have a name or anything." Then, as now, she kept the books.

Having a dusty shop in the house didn't last long, Kulowitch recalls. In less than a year, Bouterse had a shop

elsewhere in Durham, leaving it some years later for a larger shop in the same city. Eight years ago, they moved about eight miles to the present shop, where business continues to grow. Sales in 2004 were \$1.5 million, and Bouterse and Kulowitch expect \$2 million this year.

Bouterse had pursued woodworking as a hobby in his home country of Holland and later in the United States, where he moved after college. "He loved wood," Kulowitch says. When he started working with it professionally, "things just fell into place," she adds.

Ironically, with the business growing, "I am not touching wood any more," Bouterse says. Instead, he is touching computer keys.

"So it goes," he says.

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