New technologies and management transform Brochsteins
t begins with a flitch.

Technically, the work at Brochsteins begins with architects’ plans and elevations. You might see a wall of cabinets, say. These drawings are marked up and revised into “details” drawn at scale, which look like anatomical models, all joints and hinges, walls and thicknesses. Then site visits are made, field dimensions measured. A cutbill, like a pre-season roster for a football team, is finally released to the shop floor for every part, indicating core type, sizes, and quantities.

On the shop floor at Brochsteins, you can see the recent transformations in this trade and industry. Gone are the manual rasps, planes, and saws. Gone is the “star program,” says Deborah Brochstein, the company’s third-generation owner, in which one man could master every nuance of every machine. Now, a CNC router changes out tools robotically, cutting and drilling with a precision no human could achieve and at a rate none could sustain. But the art here, now as always, begins with a sliced-up hunk of wood called a flitch. The choices that distinguish a Brochsteins credenza from an ordinary one begin with the initial search through the flitches in their veneer library, a room the size of a high school gymnasium, a kind of inventory cum museum.

Here, more than four million square feet of veneer and more than 40 species of wood are labeled and stacked on shelves from floor to ceiling: pommele sapele from Africa, East Indian laurel, macassar ebony from Southeast Asia, pearwood from Europe, walnut from the United States. A cabinet near the library doors opens like an index or table of contents to show samples of each species. For a moment it seems simple. Choose your species. Choose your grain. But when you close the cabinet and wander the library, you are confronted with its complexity. These materials suggest the raw ideas that go into a novel, before the writer plies her trade and knowledge, assembles them, and gives them shape.

Brochsteins has been in Houston since 1935, originally as a firm that designed and fabricated store fixtures and showcases. Over the past several decades, Brochsteins has become a custom manufacturer that specializes in working directly with architects. Its credenzas, doors, conference tables, desks, paneling, and cabinets can be seen in the Capitol building in Austin, the Samsung Headquarters building in Seoul, the J. Paul Getty Center in Los Angeles, and the corporate headquarters for USA Today. Brochsteins now is working on a multimillion-dollar project for the Hess building, the tower on...
was influenced by Art Deco, including the 1939 World’s Fair in New York City and the futurist aesthetics of “The World of Tomorrow.” This building stands today on a grassy plot between Main Street and Stella Link Road, a mile south of Loop 610. A tree-lined drive leads you onto the grounds. Reliant Center’s pillow roof is visible from the parking lot. The thrum of a fountain sending water into an Olympic-sized gazing pool commingles with the swish of passing cars on Highway 90 (South Main Street).

According to family lore, Isaac Brochstein liked to say the first generation builds a business and the second generation destroys it. His son Raymond proved him wrong. Inheriting the company in the mid-1970s, he drew on his training at the Rice School of Architecture and his experience as a licensed architect, establishing a reputation for refining designs submitted by clients, whether of local or international prominence. “He built consensus, tried to educate others, was a good listener, let them make their own mistakes. But he’s still a guy,” Deborah Brochstein says, laughing.

She took over the company in 2000. “I’m the generation expected to fail,” she says. “Many of our competitors went out of business when they were entering the third generation of owners. Business and family are not always a great combination,” she adds, stifling a knowing grin.

But she never expected to run Brochsteins. As a young woman, she worked summers filing, though she says she would rather have been sanding in the finishing department. Earlier in her life, on Friday nights when the family would gather for dinner, she says, “They would talk about the business. I would sit under the table.”

Later, she studied graphic design and photography and began working as a designer in Los Angeles. While designing posters and print materials destined for the garbage, she says, “I realized I wanted to make something with a longer life of usefulness. A product that might last generations.”

This brought her back to Houston, where for the past ten years she has been building such products—and a new management style based on John Kotter’s “principles of change,” as she says, which she honed at Rice University’s business school. Communication and teaching, and listening and collaboration have been encouraged to root out a faltering hierarchical paradigm in which one man alone has the answers and makes the decisions. Now Deborah Brochstein emphasizes “mutual trust and respect,” tries to “elicit feedback,” and seeks to “leverage the best capa-

2 This hank of walnut has been sliced thin as lumber and is called a “flitch.” The shape and grain of the original log remain evident in this example. 3 These samples of butting demonstrate how wood from the same species can have dramatically different effects depending on the type and placement of cut. 4 The woods—Mayan Rosewood, De Oro, Orange—sound as tantalizing as high-end coffee beans or flavors of hashish. 5 In the foreground, delicate flitches are stored in closed boxes. In the background, two "books" of veneer open for browsing.
bilities,” says Shilpa Amaram, the company’s vice president. “It’s a democratic style,” she says, “that values being open to a changing world.” Amaram—who has no experience in millwork, she says—was hired not because Brochsteins had an opening, but because they wanted her on the team.

“She brings sophistication and calmness,” Deborah Brochstein says of Amaram. “She helps us have productive confrontations.” This kind of language is unusual in the industry. Amaram serves in an undefined role as a kind of company philosopher, helping to think about the future. She began by organizing the Brochsteins archives, which gave her

6 Gilbert Leija feeds medium density fiberboard (MDF) into a machine that applies adhesive and then pressses veneer onto the board.
7 Leija places veneer on MDF
8 Paints like these are used for touch ups during final inspection.
9 Risk Gutierrez demonstrates how a rectangular veneer sample can be manipulated in a mirror box in order to make a precise determination of angles and cuts to create different patterns.
a sense of the family and business history. Now she collaborates on five- and ten-year strategies for growth and is rejuvenating heretofore separate and incommunicative computer databases. “She helped us come into the current era,” Deborah Brochstein says. “She taught us different ways of behaving. She helped us question ourselves.”

Just as the business has evolved from generation to generation and been interpreted anew, the product is developed and revised from department to department. This creates a “sequential flow of work,” as Deborah Brochstein says.

And it does begin with a fl itch. Men in the veneer department pore over the chosen fl itch’s patterns like jewelers or copy editors. After making their choice, they trim and splice the sheets together to make a “face.”

The faces are then pressed to the wood core, and the product is moved to the machine department.

Here, edge banders, panel saws, and CNC equipment cut the wood to precise sizes accurate to hundreds of an inch. But the older tools like the double-end tenoner might as well be scissors compared with the CNC, three of which are poised near the physical center of the shop floor. These machines look like the product of a brainstorm between Dr. Seuss and Dr. Frankenstein: a platform the size of a conference table is topped with a series of thick articulated hoses and vents. A black brush like a mustache runs from one end of the machine to the other to trap the dust. The tool holder, driven along a three-dimensional computerized trajectory, can automatically swap from saw to molder to drills of various sizes. The CNC resembles a Rube Goldberg device, or a thing designed primarily for time travel—though it happens to cut wood with seemingly subatomic precision.

These parts are then moved to the cabinet and assembly department, where they are put together in a kind of dry run to make sure all the custom pieces align. They then proceed to finishing, where they are sanded and applied with coatings.

The coatings smell syrupy, like permanent markers, and the sawdust has that grainy natural odor you recognize from the bottom of oatmeal canisters. Brochsteins is experimenting with new coatings to reduce Volatile Organic Compounds or VOCs. You learn in finishing that every log reacts to stain uniquely. The stain changes color as it dries; lighting conditions change the way the colors are perceived; even the wood changes, becoming darker or lighter with time.

This process might begin with the fl itch, but it ends with pieces of astonishing beauty. It is no surprise the arches in the grain of the wood are named “cathedrals.” You experience a kind of religious feeling when you see the product completed, the veneer polished like crystal and unified within the site’s architecture. The grain curving along the piece’s demanding contours assumes the variegated shine of a current moving over riverstones. The perfect stillness of the final product seems faraway from the commotion of the CNC, the hiss of the hoses blowing sawdust from workers’ hair, the painstaking splicing of veneer in the machine department. The product seems timeless, too, somehow destined both for the executive suites in the city’s newest skyscraper and the sexy lounges in a bygone hotel.

Andy Elisario came to Brochsteins because of its reputation. He was made plant manager two years ago, a move even he conceded was unusual in this industry. “Seriously?” he says. “You’re going to put a 31-year-old in charge of all this?”

He compares his work now to that of a football coach. He calls a play. The team runs it. He facilitates. He motivates. He knows he would not have been put in charge if he did not have these “soft skills,” as Deborah Brochstein calls them. Elisario points across the floor. Joe Aguirre, the company’s longest-tenured employee at 38 years and counting, is huddled up with Mike Cline, a 26-year-old supervisor. Cline earned a master’s in engineering technology from Pittsburg State in Kansas, a graduate program that has become a kind of farm system for Brochsteins; Cline was the first to work here, and several Pitt State alums have followed him south. Aguirre is well above six feet tall, broad in the shoulders, with thick, gray hair. He looks like a veteran quarterback standing next to his rookie slot receiver, Cline, with his muscular forearms and quick eyes.

The two men are in the machine department. “That machine,” Elisario says, “requires a $25,000 attachment to stack the product automatically.” He points to the end of the machine’s conveyor table. “We took some
Wood dust flits as the CNC sweeps across the MDF in the buzzing blur of drilling a doorjamb.
plywood, and Mike used some computer ingenuity, and we made it do the same thing for a tenth of the cost. But that couldn’t have happened if these guys didn’t know how to teach each other and communicate.”

This is not the way the industry has always done it. Once, you had skilled craftsmen whose hold on their knowledge was their hold on their job. To secure any longevity, you had to protect what you knew. You had to be competitive: your knowledge would go out the door with you. Under that system, the practice of millwork, the art of it—and the business, too—was likely to be lost, never passed down.

Now, larger changes in the industry, including a growing reliance on computer technologies, a shrinking number of recent high school graduates skilled in trades, plus the sheer scale of the custom work that companies like Brochsteins are sought out for, have required a new paradigm. “No one knows everything anymore,” Elisario says. “But everyone knows something.”

The center of the new Brochsteins might be an open workroom they call “The Fishbowl.” To one side are the engineers’ desks. To the other side, a few strides away, is the door to the shop floor. Walled in glass, the room is without doors. A dry-erase board wraps around a rear wall; a large-screen monitor displays digital files; a conference table is covered with drawings that are themselves covered again with notes and measurements. This is where the company’s “tacit knowledge,” as Deborah Brochstein calls it, is expressed. This is where science reasons with art and philosophy inspires practice.

“But you can still see my grandfather around here,” Deborah Brochstein says. The original building’s wood support beams are still standing on the shop floor. Banks of windows loom above its exposed ducts and drape the machines in the same southern light, now as always. Outside, the building continues to make the same promises. Its loyalties are given equally to parallels and perpendiculars, the horizon and the atmosphere, the past and the future.

**Finishing**

12 Light floods the shop floor. The original section of the building is supported by wooden beams and steel trusses. 13 Wilfredo Bonilla uses a vacuum lift to pick up MDF and place it in the newest CNC machine. 14 Computer-driven machines have increased the speed and accuracy of millwork. 15 Panels are sanded and carefully matched in the order they will be installed on the job site. Though automated sprayers do most of the staining, workers still spray and wipe the parts by hand to create unique effects the digitized machines cannot replicate. 16 This interior features panels and floors made of wood veneer, demonstrating the effect of mixing cuts with skill and precision.