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Elbert: Water-jet designs a cut above most at Fairfield firm

By DAVID ELBERT • delbert@dmreg.com • July 18, 2010

Fairfield, Ia. — If you attend the Iowa State Fair next month, you're likely to see the handiwork of two unlikely business partners, Jim Belilove and Harri Aalto.

Belilove, 60, grew up in Berkeley, Calif., and has a graduate degree from Harvard Business School. Aalto, 62, is a sculptor who was born in Finland, grew up in Canada and worked in Switzerland. Together, they own Creative Edge Mastershop, a tile- and stone-cutting business.

Transcendental meditation drew both to Fairfield, where Maharishi University is located. In 1988, they formed a business that would marry the then-emerging technology of water-jet cutting with art to create a decorative stone- and tile-cutting business.

Their custom stone fabricating business is one of the largest of its kind in the nation, said Jennifer Adams, managing editor of Stone World magazine.

"They were one of the first to do that kind of work," Adams said. "They do beautiful work all over the country."

Visitors to the State Fair, Aug. 12-22, can see one of Creative Edge Mastershop's more intricate projects, a county-quilt mosaic that will wrap around the outside of the new Richard O. Jacobson Exhibition Center. The \$20 million, 110,000-square-foot building is a major addition at this year's fair, and one of its distinctive features will be the decorative line of more than 400 tile squares midway up the outside of the building.

The 15-inch tiles, which will create a stripe around the building, were designed to celebrate Iowa's 99 counties. Each square is based on a quilt pattern provided by an Iowa county.

Workers will begin attaching the tiles to the building this week.

To create the mosaic, quilt patterns from all counties were scanned into computers at Creative Edge Mastershop and programmed into the memories of water-jet cutters. Then, using 10 colors of tiles, the company's 40 employees cut each quilt pattern and assembled the pieces into 15-inch squares in the 120,000-square-foot plant.

Some designs required as few as 20 cuts; others involved hundreds.

The company's 12 water-jet cutters can slice through steel, granite, marble and tile to create intricate flooring and wall coverings for hotels, homes and commercial buildings. They've done memorials for other clients, including the Kennedy Space Center, major-league sports teams and New York's Ticker Tape Walk of Fame.

Creative Edge Mastershop is a product of the entrepreneurial culture that developed in Fairfield after Maharishi University arrived in the 1970s to take over the campus of Fairfield's failed Parsons College.

Belilove was one of the first practitioners of transcendental meditation to arrive in Fairfield. He was part of the 1973 team that Maharishi Mahesh Yogi sent to inspect the Parsons campus before buying it. He was also the first public relations person for the school.

After a couple of years in Fairfield, he went to Harvard, got an master's of business administration

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degree and stayed in Boston for 10 years, managing a machine tool company.

"I was on the tech side," he said. "We were doing computer controls and instruments."

Aalto had a much different background. The sculptor had a design studio in Switzerland in the early 1980s when he first learned about water-jet cutting of stone and other materials.

In 1988, the two men saw an opportunity for both of their talents.

It involved the failure of a Fairfield startup, a business that was going to make water-jet cutting equipment for the glass industry.

Belilove and Aalto took over the company's loans. In return, they got ownership of two prototype water-jet cutters and assorted equipment in the building that the company now occupies.

Instead of making equipment for others, they used the equipment they acquired to start a custom stone fabricating business.

The technology at that time was relatively new and had a number of bugs, Belilove said.

Water-jet cutting had been developed in Seattle for the aerospace and paper industries. It was used to make precision cuts of aluminum and titanium, but it was also used in the manufacture of paper diapers, which were hard to cut with blades because of the multiple layers of paper, Belilove said.

Today, in addition to cutting hard surfaces, Creative Edge Mastershop cuts carpet, vinyl and softer fabrics that are used to make decorative coverings.

High pressure is the key to water-jet technology. Hydraulics create up to 50,000 pounds per square inch of pressure, which is released through a nozzle that has a tiny opening just five- to 10-thousandths of an inch in size. Fine sand is added to the spray to increase cutting power.

In the early days, the high pressure demands of the technology resulted in a lot of equipment failure. Nozzles, tubing and pumps wore out quickly,

sometimes in hours, Belilove said.

Stronger materials and tighter connections resolved many of the early equipment problems. But the nature of the job — cutting through inch-thick slabs or granite, for example — still stresses the equipment.

That's one reason there isn't a lot of competition in the business, Belilove said. Only a handful of independent shops take on the kind of jobs that Creative Edge Mastershop does, he said.

Adams, the Stone World editor, said she knows of only one comparable shop, Waterjet Works in Texas.

"I remember thinking this was going to be a lot easier than it turned out to be," Belilove said.

Belilove and Aalto went into the business thinking the product — elaborately carved inlays of marble, steel and granite — would sell itself.

Instead, it's taken 15 years for the design community to realize and begin using the elaborate designs that are possible in hard surfaces for a fraction of traditional stone-cutting costs.

Today, Creative Edge handles jobs that run anywhere from a few thousand dollars to \$500,000, with annual sales of about \$4 million.

"It's a wonderful technology," Belilove said. "It's cold. It's clean. It cuts everything. It doesn't leave a

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