



HANDSHOUSE

A Norwell studio melds art, craftsmanship and history

By Christie Lowrance

A replica of the wooden Revolutionary War-era submarine, the Turtle, slips eerily below the surface in its trial launch in Duxbury Harbor. Built by the Handhouse Studio, its creation and testing were filmed for the Discovery Channel.

Photo by Cary Wolinsky
 Courtesy of Handhouse Studio

Creativity thrives in unexpected places. Deep in a Norwell woods, at the end of a mile-long, rutted dirt road, cushioned between the North River and conservation land, is the 7.5-acre home of Handhouse Studio and its co-founders, Rick and Laura Brown, both artists and educators with design/build credentials. Built in the 1690s by a high-ranking British officer, their house looks like other classic antique homes in the area, but the huge barn/studio adjacent to it most resembles a giant covered bridge, and is clearly intended for unusual purposes.

Even with that expectation, few casual visitors would guess that this rural learning center is the construction site for the full-sized, working replica of a Revolutionary War-era wooden submarine, a 50-foot construction crane used to build French bridges in the 1750s, and other long vanished historic objects. "Handhouse looks at history through objects," says Laura, describing the non-profit organization she and husband Rick started in 1999. "It initiates adventurous hands-on projects as a way to explore history, science and the arts."

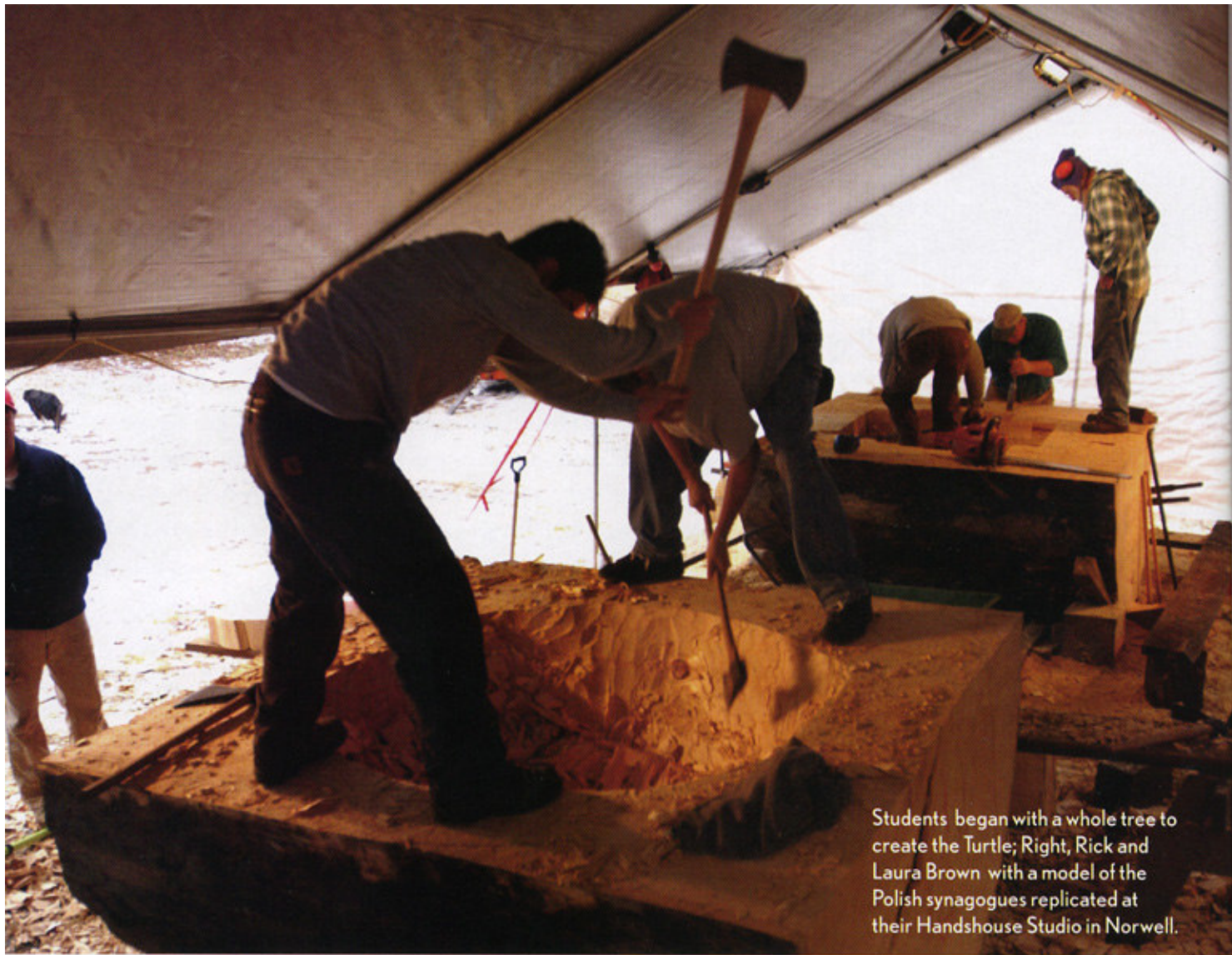
In April, the peaceful Norwell setting was "turned into a medieval city," when Handhouse Studio hosted an international workshop that brought together students, professors, scholars and traditional craftsmen to study and build two scale models of wooden synagogues once common in Poland. These log-walled objects have been lost, Laura says. "There are none. If not earlier, they were all destroyed during the Nazi invasion of Poland in World War II. To study them is to study the cultural heritage of Poland and the Jews of Poland; this is an example of the complexity of a building."

The Browns are engaging, highly articulate and intellectually inquisitive people whose soft accents identify their Southern roots. Both teach sculpture at the Massachusetts College of Art in Boston. "Handhouse represents our love of education," says Laura. "We have always been involved in education in an original sense, energizing it, trying to push beyond the boundaries. We want to make learning a lifetime thing, where you learn to love to learn, where the learning process is integrated with the living process."

That was the plan in 1995 when they discovered and bought the Pembroke property, the same year a powerful storm knocked down hundreds of trees in the South Shore; towns were delighted to let the Browns remove as many as they wanted. It took a year to gather and cut the wood, a weekend to frame the barn/studio, and another two years to complete the massive timber frame structure that Rick designed.

In 1997, they accepted an invitation from PBS director Michael Barnes to participate in a NOVA project in Inverness, Scotland that engaged 50 other specialists and students in building and testing a full-scale trebuchet, a formidable medieval siege machine designed to break down castle walls. They also worked with NOVA on "Pharaoh's Obelisk," a project that explored ancient Egyptian methods for moving massive granite objects like the 36-foot tall, 50,000-lb. obelisk they successfully sited in Chelmsford, Massachusetts.

For centuries, construction and dockside cranes, not unlike those used at Boston's Big Dig site, have been used to move heavy objects; in 2002 and 2003 Handhouse Studio coordinated the study and building of two human-powered 18th century French cranes, using students and faculty from three colleges as well as timber frame specialists. "If we had said to students, you're going to learn about France in the 1750s, it would have been



Students began with a whole tree to create the Turtle; Right, Rick and Laura Brown with a model of the Polish synagogues replicated at their Handhouse Studio in Norwell.

different,” remarked Rick. “But we gave the image to students, and said, do you want to build this, and people were standing in line to sign up for the course. In the end they learned about social, political, and economic forces and the materials and skills needed to make it; they learned about France in the 1750s.”

Organizing 50 to 100 people to work together in making a large object most of them have never heard of, much less seen, is not a task everyone would tackle. “I like the monumentality of (the projects), the scale, and the collaboration they require,” comments Rick. “At first, I wasn’t interested in history, so there was a transition from making sculpture to making actual historic objects like the

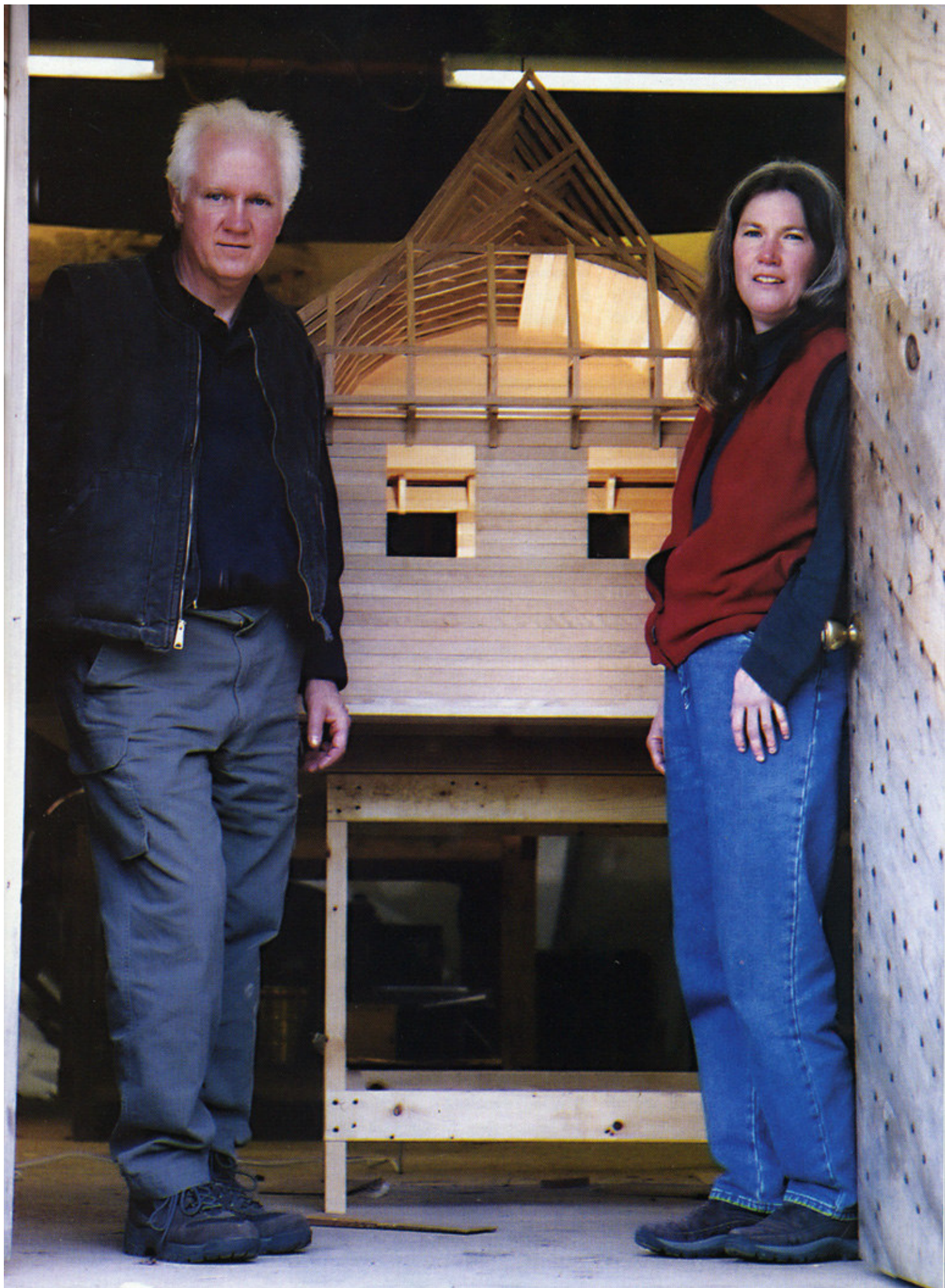
trebuchet or the crane,” says Rick. “But there is a relationship between tools and problem solving. When you pick up a tool, you are connected with the first tool and the maker. You have to have a sense of history.”

“It is a very intense way to learn about history, process and yourself,” says Laura. “The students and professors are learning together.”

“The students work with hand tools of the scale and size that would have been used on the original objects,” says Rick. “They cut, trim, and hew trees with the kinds of axes, adzes and planes that were brought over from London. They never imagined they would chop down a tree;

many of them had never seen it done.” Handhouse projects are built quickly. The Perronet crane, for example, was made in four days, and the wooden submarine in 10 days. “It is a very intense way to learn about history, process and yourself,” says Laura. “The students and professors are learning together.”

Exactly how does one physically recreate historic objects that no longer exist? “Visual art provides visual, empirical information,” Laura explains. “The information for all these objects was derived from period etchings, paintings, drawings in Syrian, Italian and medieval art. Art back then was not about drawing but telling a story. To interpret it, you have to look into the context. You have to learn the



history of the people at that time, you have to walk in their footsteps and listen to their voices.”

That, however, is not necessarily easy. And when Handhouse was approached by NOVA to recreate the Turtle, a hand-made, wooden submarine designed and built during the American Revolution, the Browns accepted the challenge of working without any original drawings or physical remains. Although the Turtle did fail to blow up its intended British warship target, it was successfully piloted

Thomas Jefferson 12 years later. “It is hard to read because the words had different meaning than today,” says Laura. “For example, he wrote ‘The seal down.’ What does that mean? It doesn’t mean a rubber O-ring. They were on a farm, they were working in secrecy, and they’ve got to seal the thing: what are they going to use? We decided to use different natural substances, such as lard, lanolin, and beeswax with felt.”

Bushnell said the exterior of the submarine “bore some resemblance to two

and service manager Rob Knecht who operated the travel lift, there were “safety precautions all over the place.” Later, the submarine was transported to the Naval Academy in Annapolis where it was lowered into an 18-foot deep, 300-foot long hydromechanic test tank and tested for drag, buoyancy, propulsion, dive, and operation capability. Navy specialists were clearly skeptical about the Turtle’s ability to operate at all. “They thought, these guys are from an art school and they are building a submarine?” says



Copper parts of the Turtle are heated and then slowly cooled to harden them.

through New York Harbor - an amazing feat for the time.

Turtle inventor David Bushnell of Saybrook, Connecticut, was a 31-year-old farmer who attended Yale from 1772 to 1776. He had experimented with underwater explosive devices, and intended that his manned submarine, which had a 30-minute air supply, would attach a bomb to the deepest part of an enemy ship’s hull. Bushnell and his brother Ezra worked on the craft from 1774 to 1775 in total secrecy and left no record of their plans.

The only primary source evidence of Bushnell’s work is a letter he wrote to

upper tortoise shells of equal size joined together.” To duplicate this, Handhouse obtained a massive section of Sitka spruce seven feet in diameter from British Columbia. “He described the interior in geometric terms, like ‘The end verges toward an ellipse as near as the design will allow,’” says Laura. Interestingly, she notes that Bushnell never referred to the Turtle as a boat, and apparently considered it a machine.

In January 2003, the completed Turtle replica had a successful trial launch at Snug Harbor Yachts in Duxbury, first unmanned, then manned, then completely submerged. According to sales

Rick, grinning. “But we had the advantage of having people who had the colonial skills Bushnell had.”

“It was quite the event,” recalled Laura with satisfaction, “We accomplished bringing to life what David Bushnell made. I feel very connected to what and who this character may have been, to his imagination, to the issues of war and destruction. I hope this project will show what people can do when they come together, the power of human creativity.”

Filmed for the Discovery Channel, the Bushnell Turtle project has been aired in France and England, and will be shown in the US this fall in a series titled

"Ancient Arsenals." Future exhibitions will be held at the Submarine Force Museum in Groton, Connecticut; the Atlanta History Center in Atlanta, Georgia; and the Augusta Museum of History in Augusta, Georgia. The Browns hope Bushnell will be one day credited with designing and building the first American submarine, even though it failed in its mission, and with the first application of a propeller.

"We turned the experience from mak-



PHOTO BY JAY ELLIOTT

ing a program for the Discovery Channel to making an educational project with collaborators," she added. "When you take it beyond ownership, what we see happening is you put all the knowledge on the table, all the skills on the table, to genuinely share and learn. The Turtle is not ours. We are facilitators. It is an accumulation of information from all points; students contribute as well as experts."

Rick agrees. "There is something about the formula for looking at history and learning through collaboration," he says. "People become very open, dedicated and generous with their skills." ■