In most modern hot shops, one large furnace heats the molten glass, and many smaller furnaces are utilized for reheating and manipulating the material, a system that allows multiple glassworkers to produce simultaneously. The inefficiency of this process inspired Angus Powers to investigate primitive Roman furnaces that run on a single fire and use the waste heat to accomplish all of the other shaping. “It is worth considering this technique in the green future of contemporary methods of glassworking. Reaffirming the simplest and cheapest ways of performing some tasks helped shine a light on the inefficiencies that have resulted from constant innovation becoming standard practice.”

Powers has been building updraft wood-fired primitive furnaces since his masters studies at Tyler School of Art at Temple University, Elkins Park, Pennsylvania. He took a graduate class with Dr. Philip Betancourt focusing on ancient techniques, which inspired him to investigate and create core formed glass vessels that actually predate the process of blowing glass. Another Tyler glass faculty member, Dan Cutrone, aided Powers in the process of both research and the creation of a small primitive glass furnace from scratch. With his first primitive furnace, Powers was able to create a series of small core formed glass vessels and involve the Tyler glass community in his experiment. After a successful demonstration for the class, Powers began to host various workshops for Jon Clark’s undergraduates at Tyler School of Art throughout his graduate studies. “It was at that point I realized the huge potential for the experience to be used as a teaching tool to share and gain historical perspective in the field.”

For Powers, head of glass and chair of sculpture at the New York State College of Ceramics at Alfred University, Alfred, New York, the most important function of this research and the furnace itself is education. It offers students a hands-on historical lesson on the technology and working conditions of ancient glassblowers while providing a deeper appreciation for the convenience of a modern hot glass facility. “My students are completely spoiled by the hot shop at Alfred University and basically have access to hot glass at all times during the academic year. Working with Roman furnaces requires days of splitting wood, gathering and fabricating tools and furniture, and stoking the fire. Each of these tasks delivers a lesson.”

In 2012, Powers built his first Roman or primitive daub furnace using nearly 3,000 pounds of local stone, sand, alfalfa, clay, and grog. This fully functional wood furnace with multiple pots of colored glass was capable of reaching contemporary temperatures. After three firings, he decided to host an open house and a workshop so his students could work at the furnace. “At this point, the furnace was running very well. Its super structure has held up tremendously, even with the heavy precipitation of Hurricane Sandy and the repeated freezing and thawing of the winter season.”

First Open House and Workshop

Powers, Daniel Volk, and guest artist Phil Vinson worked together to unveil and demonstrate the Roman furnace to Alfred glass students. The October 2012 open house was coordinated with the Alfred sculpture event, Meltdown, as a way to integrate Powers’ furnace into the existing programming and take advantage of the local community interest in the fire arts as well as the various visitors from other schools who were in town for the iron pour. “The open house and workshops were really valuable to me, because they let the local community have an experience unlike anything nationally available. The event provided glass artists from Alfred University with an opportunity to get to the root of their craft. I think creating objects in this rare type of furnace empowers artists and puts the objects into a unique context, one impossible to achieve through modern practices.”

by Shawn Waggoner

ANGUS POWERS
RESURRECTING THE ROMAN FURNACE

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Approximately 100 people came throughout the program of demonstrations and exhibition of work produced from the furnace, followed by a workshop where visiting artists plus graduate and undergraduate students created pieces from the furnace. Blogged Vinson: “The little wood-fired shop is amazing. It is one of those things that all glassblowers want to experience but few actually ever build. Angus is a bit of a pioneer in this field. This is not the first Roman furnace that he has built, and he is getting pretty good at it. The furnace was stoked by his friend and fellow pyro, Dan [Volk]. Everything needed to make glass was right there in the lean-to except the annealer. That was about 30 yards up the hill in the studio, which means after you are finished forming the glass, there is one last flash heat. The piece is held up for the spectator’s approval, then as the applause fades out in the distance, you jog up the hill through the autumn mist, hot finished glass on the end of the stick. There wasn’t a single casualty from the Olympic-style marathon to the annealer.”

Vinson continues: “I had a blast. There was a mini bench in front of the furnace close to the ground, so the flames coming from the opening of the furnace did not remove facial hair. It just so happens that I have a shorty blowpipe, which turned out to be the perfect size. It got lots of use that day. One by one, I would bring the molds out, make a piece, do the triathlon up the hill, have a sip of cider, then go to the truck and walk another one down and quietly place it behind the bench. There were lots of folks there, and we all took turns making stuff. It was an experience like no other as far as blowing goes—totally different than gas- or electric-fired equipment. It really felt like I was getting to the roots of my craft.”

Clark Workshop Leads to Collaborative Work

On November 13, 2012, Powers invited artist and educator Clark to attend a private event making work in his Roman furnace. In the early 1970s, Clark established a new program for glass at Tyler School of Art. He now holds the position of Professor Emeritus from Temple University. Clark received his master of arts degree from the Royal College of Art in London, and his bachelor of science from the University of Wisconsin at River Falls. His students have gone on to teach and head glass programs at Tulane University, New Orleans, Louisiana; Virginia Commonwealth University, Richmond, Virginia; the University of Louisville, Louisville, Kentucky; Alfred University, and Cleveland Institute of Art, Cleveland, Ohio. Clark’s work can be found in international art collections, including the Kunstmuseum Düsseldorf in Germany; the Niijima Glass Art Center in Japan; the Tittot Museum of Glass in Taipei City, Taiwan; the Art Gallery of Western Australia in Perth; and the Corning Museum of Glass in Corning, New York. He was awarded the 2009 Pennsylvania Council on the Arts fellowship and numerous fellowships from Temple University and the National Endowment for the Arts.
Powers received much support from Clark as a graduate student attending Tyler School of Art, where Powers received his BFA. “I remember Jon showing me a slide of him working from a primitive wood furnace when he was traveling in Egypt early in his career. Jon was a very positive mentor and has done a great deal to shape my personal creative research as well as my teaching philosophy and general attitude about life. Always know your history (ancient and recent), always update your curriculum for the benefit of your students and your teaching practice, and always make work that is true to your own personality.”

Powers and Clark took turns making objects and eventually collaborated on four finished pieces. Clark provided and utilized a plaster blow mold of a Kewpie doll, a figurine based on comic strip–like illustrations by Rose O’Neil of sweet-faced, big-eyed babies. They first appeared in *Ladies Home Journal* in 1909 and were contained in the time capsule at the 1939 New York World’s Fair. “Using this mold as a starting point, we would add bits of glass as we handed the blowpipe back and forth between us. In a way we were creating a hybrid of an ancient relic and a modern representation of the collaboration between a 1950s childhood and the skill sets of both of our histories. I admire the resulting objects, not from a formal perspective but more as a perfect object created by two generations to represent a day.”

**Making Work in a Roman Furnace**

At that point Powers started to experiment with nontraditional techniques and developed multiple series of sculptural work made in the Roman furnace. “I began paying attention to the setting and my immediate surroundings of nature for both formal and design inspiration, as well as a wealth of organic materials and forces to influence the work.”

Although Powers had doubts and fears throughout the entire building of the furnace and well into the firing phase, he was excited and motivated by the first few solo firings and the resulting objects. The first firing was a single crucible of clear with powdered orange glass. “I was still in the proof phase of the furnace design, so I kept the objects as simple as possible. During this initial firing, I realized that I would be able to make the largest objects that I have ever been able to make out of a wood furnace and the most articulate objects as well. As you can observe, I gained confidence with scale and finished the day with a test of creating something very small and thin.”

For the second firing, Powers followed the same philosophy but used an opaque red glass from Fenton Cullet Company in West Virginia in place of the lightly fritted glass. “Using solid opaque color can be a bit of a challenge for a glassworker, since it takes away the ability to see thicknesses in the resulting form during the blowing process. I do not recommend this to anyone who has not been working glass for very long, since it would add difficulty to an already unusual way of working.”
Powers was now able to create accurate representations of forms from historical references using the Roman furnace. “I have been to the Corning Museum of Glass dozens of times and have gone directly to see this form in its case. I had a great deal of personal satisfaction after I blew this bottle.”

Surface Treatments and Modernized Forms

Powers had always been enamored with the iridized surface of ancient glass that has been buried for some time. He fired the furnace on three separate occasions to examine different applications of powdered glass that would mimic the mineral and metal deposits on the surface of the glass objects. He used powdered glass from Gaffer Glass USA, including but not limited to Silver Luster, Gold Luster, Green Luster, and Black Luster.

After posting yield from the furnace and sending images to colleagues in the glass field, Powers was invited by a curator to show four Roman forms alongside documentation of the context in which they were made. Vase as Voice, a group exhibition of handmade glass vases, opened in the Armstrong Gallery at the McLean County Arts Center on November 10, 2012, and ran through January 5, 2013. Glass artists from central Illinois and beyond exhibited their interpretations of the vase form. Utilizing handblowing and flameworking techniques to create functional and sculptural vessels, the forms expressed the artists’ personal aesthetic or relayed a narrative. The exhibition included work by Carrie Battista, Steven Ciezki, Patrick Frost, Slate Grove, Carmen Lozar, Penelope Rakov, Amy Rueffert, and Matthew Urban as well as Powers.

“I had expected or at least hoped that viewers would look at these objects or at any of the objects created from this furnace in a different way due to the extreme context. I hope as I continue to move forward with this project that I will be able to provide documentation and background information alongside the objects fabricated outside with all-natural, sustainable materials, and that this will give a place and conceptual power to the objects in future exhibitions.”

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Creating Sculptural Series

Powers was finishing his day by making a bottle form when, due to exhaustion or distraction, he lost control of the form. He took the resulting “blob-ject,” blew it into the woodpile, then sucked all of the air out of it. “I was pleasantly surprised by the organic linear object that emerged and was attracted to the surface texture mixed with the surface treatment I had been toying with.”

He began purposely creating these objects with distinct color layers combined with patterns of the logs over the next three to four firings. “There is something intriguing about an object that is created from trees, sand, and earth, and the way those elements resonate with the formal attributes of the object.” The first notion of creating a sculptural object that would relate to the whole experience of working in a Roman furnace started as a momentary impulse and ended up being some of Powers’ favorite objects made using these ancient processes.

Powers also became interested in combining his work from the Roman furnace with pieces he exhibits in contemporary galleries. Although early in the process, the artist has made a series of half planets referencing the outer crust and molten cores of moons and planetary bodies. “I have begun to use these smaller planetary objects with some new glass pieces that I am making in the Alfred glass studio.”

Making History

In addition to building and teaching through his Roman furnace project, Powers pursues glass sculpture and design. His work appears in the collections of the Museum of American Glass, Weston, West Virginia, and the Glasmuseet Ebeltoft, Denmark. Powers has participated in various group shows at the Noyes Museum of Art, Oceanville, New Jersey, and the Muskegon Museum of Art, Muskegon, Michigan, and had a solo show in the Ceramic Museum at Keramicmuseum Westerward, Hohr-Grenzhausen, Germany. The artist has performed solo, collaborative, and sustainable glass practices demonstrations at the Glass Art Society (GAS) conferences in Pittsburgh, Pennsylvania; Toledo, Ohio; and Chicago, Illinois.

Powers will continue tinkering with some new way to melt glass, whether ancient or untried. Recently his research has turned more toward engineering and working with experimental glasses. Powers has received numerous requests to share copies of the results of his Roman furnace project. His intention is to eventually self-publish this experience in the form of a hardcover photo journal that would be published and sent to the Corning Rakow Library and Scholes Library, and be available to the public upon request.

Visit www.madeinchinastudio.com/2013/01/roman-style-glass-blowing.html?spref=fb to read more from the blog by Phil Vinson, guest artist at the Roman Furnace, Fall 2012.

Look for Subscriber Benefits coming to Subscribers Only via links in upcoming e-mails from Glass Art. This Bonus Content will include more information about Roman furnace projects around the globe.