

Article on How the Glass Sculpture in the Rotunda was Made at the Falls of the Ohio State Park Interpretive Center



by Kenny Karem, Former Falls of the Ohio Foundation Board Member, author of Probing the Wonders of the Falls guidebook

Welcome to the rotunda where a dynamic blown-glass sculpture blends with the Falls of the Ohio area in an intriguing creation of glass and metal images which reflect a unique crossroads of cultural and natural history. What a wondrous world it is with swaying mobiles of tinted glass cast in many moods with the varying, changing light and gentle movements.

When sculptor Brook White of Flame Run Studio in Louisville, Ky., won a national design competition for the rotunda sculpture, his complex, diverse designs and concepts matched impressively the designated themes of the future exhibits at the Falls of the Ohio Interpretive Center— *The Ancient Sea, A Changing Land, Converging Cultures* and *The Falls Today*. In a dazzling mix of multi-colored blown glass shapes framed and supported by stainless steel set in a suspended sculpture, he blended abstract and realistic images that reflect nature, art, science, history and culture.

Already familiar with the natural wonders of the Falls of the Ohio State Park and National Wildlife Conservation Area covering over 1,400 acres, Brook knew that he had to explore the cavernous rotunda when he entered the design competition.

“It’s an enormous space, extremely high and complicated with different lighting. I had to design a sculpture that would fill it appropriately,” notes Brook. “After studying the rotunda several times, I knew my sculpture piece could not be under whelming in that vast space.”

The making of the nearly 1,000–piece sculpture began with colored glass particles imported from Germany. After being transformed into a clear molten state in a 2100-degree furnace, the hot glass was tinted, continually blown and reshaped, cooled, then trimmed and finished as a final product.

“It’s glass blowers’ candy”, says Brook laughingly of the glass-blowing process. “It’s like blowing up a balloon through a straw inserted into jello.”

For the images on the hanging glass platters, a drawing was executed first, transferred to a cardboard cutout, taped on a glass platter, and then sandblasted, leaving an etched image.

“Glass loves light,” adds Brook. “Look at the many shades of blue. It fluctuates with the different lighting in here, showing movement and many different moods.”

As you view the hanging glass fossil platters representing the *Ancient Sea* theme, remember that the geological period of the Devonian Sea occurred about 390 million years ago when an immense inland tropical sea covered this area. Eventually many sea creatures were transformed into fossils, preserved in different layers of limestone. As a geological paradise, the Falls area contains over 600 fossil species identified by scientists, and is thus one of the most famous and unique exposed fossil beds in the world. Some former creatures that once lived in that ancient sea are represented here by 9 common fossils of

the Devonian Age which can be seen today embedded in the exposed fossil beds in the limestone rocks below the Interpretive Center. Here they are sandblasted images on blue glass platters hanging on 3 stainless steel bars balanced in a mobile. Suspended from the first bar on the left side from the largest to the smallest platter are:

- 1) A mystery item. [See the exploration activity sheet, question 4: Can you guess what it is?](#)
- 2) Trilobite (*Crassiproteus crassimarginatus*): An extinct arthropod animal that once swam in the sea, Note the head and 3-lobed body and tail.
- 3) Crinoid segments (*Dolatocrinus eacus*): They are flower-like echinoderms, or sea lilies, which grow in colonies on the sea floor. The “Cheerios-like” segments were strung as necklaces by Native Americans.
- 4) Hanging from the middle bar are Pipe Organ Coral (*Disphyllum synaptophylloides*): This marine animal lived in colonies in water with each tentacle shaped like a “pipe organ” extending outward to capture its food.
- 5) Wasp Nest Coral (*Pleurodictyum cylindricum*): Another marine animal colonial coral whose tube-like features, corallites, share common walls and grouped together look like a “wasp nest”.
- 6) Horn Coral (*Siphonophrentis elongata*): A solitary sea animal shaped like a horn with a single opening surrounded by tentacles for stinging its prey. It is a symbol in the Falls Park logo.
- 7) Hanging from the 3rd bar is Brachiopod (*Arteria reticularis*): a small marine invertebrate whose hard shells enclose a soft body, similar to a clam.
- 8) Bryozoan Segment (*Fenestrellina stellata*): an aquatic colonial “moss” animal that lives in a colony that branches with fan-like growth, appearing like fine lace.
- 9) Branch Coral (*Emmonsia ramosa*): This coral has branches separate from each other which reach out or “branch out” in shallow water.

On top of the dark blue glass platters are separate layers of clear and amber glass. That way, when you see light passing through the fossil designs, they are lit up with a warm glow and seem to be floating in the ancient sea, especially when there are some air currents in the rotunda gently moving the mobile.

Above the fossil platters, notice 3 stainless steel bars with blue glass segments representing waves of water—from the former glacier melt, the ancient river, the inland tropical sea, the Ohio River and the Falls today. With some air currents in the rotunda, the mobile gently moves, turns and undulates with the sea waves hovering above the ancient sea creatures frozen in glass time.

One major challenge was balancing the 9 glass fossil platters and the 3 water waves bars in the mobile. “We used sandbags to test it out, trying to achieve a balance of the suspended elements. It was a challenge to balance the different sized and weighted elements”, added Brook.

For exploring the theme of *Changing Land*, evolution, natural history and the passage of time are combined on glass platter images hanging from a leafy branch of evolution tree welded from stainless steel. From left to right, the frozen land emerges from the Ice Age with 3 brownish glass platters

symbolizing dirt, sand and rocks—the basis for new life—as the Falls area emerged from the last glacier around 20,000 years ago. Notice how life evolves in the next series of platters:

- a) Mammoth hoof prints on snow and gray limestone. Once roaming the Falls area, grazing and utilizing the natural salt licks, the mammoth has been extinct for over 4,500 years. (The elephant is its closest relative today). Note the life-size mammoth skeleton in the rotunda exhibit doorway. Alive, it once weighed over 10,000 lbs, with a height of about 12 feet and tusks of up to 11 feet. This Colombian mammoth species was cast from a skeleton in Utah.
- b) *Mystery item whose identity you can guess on the [exploration activity sheet](#), Question 7.* The large hoof prints are depicted on green grass. It is one of the largest mammals in the country and actually swam across the Ohio River in the Falls area during migration over a century ago. It still lives today in Kentucky, Indiana and elsewhere in the U.S.
- c) Human footprints. They signify our emerging and “converging” presence on earth, along with other wildlife in this area. When the U.S. became a nation in 1776, there were around 3 million people. Estimates of Native American population then vary, with some totaling about 2 million. Today the population of the US is 311 million people! Native American population today is estimated at about 2.2 million people. The last item on the “branch of life” are multi-colored flowers, another integral part of the ecological web of life. Notice that the 3 flowers have several separate blown-glass components that compose the flower.

For the *Converging Cultures* theme, a canoe represents the Native American cultures which formerly inhabited this area. As they navigated the 981-mile-long Ohio River by canoe, it was a vital source of transportation and food. The stainless-steel canoe supports 6 glass platters, 3 on each side, which further explore this theme. On one side, ancient Native American designs are etched on red glass platters. These designs were copied from artifacts of a Mississippian period culture that lived along the river about 500-800 years ago. The original artifacts can be seen at Angel Mounds National Historic Site down the river by Evansville, Ind. Archaeologists named the designs “sun circles”—a reference to the concentric circle designs that represented the sun. Almost all ancient cultures had religious ceremonies, pottery, jewelry, imagery and structures that worshipped the sun--the giver of all life. Notice also the geometric patterns, a common decorative design in many Native American cultures. The cross is a universal design, often depicting the four directions. In this ancient culture, there were 3 worlds in their cosmos: the ordered, structured upper world, usually represented by the sky, stars or milky way; the disordered, chaotic lower world symbolized by water; the middle world populated by humans.

The dark blue platter in the middle represents water in reference to the vital grand Ohio River that the canoes navigated and are now utilized by many forms of boats—an explosion of boat technology.

The third platter on the canoe is etched with a white image of a towboat on a black background, representing the many such boats that push cargo contained in metal barges that move up and down the Ohio River daily. All the original Falls Cities were beneficiaries of the dynamic steamboat era as they all were involved in river commerce and the steamboat-building industry. When the Portland Canal was opened in 1830, these river ports prospered. Today, the diesel-powered towboat represents a peak of boat-building technology. A floating, high-tech vessel with radar, sonar, GPS navigation and telecommunication, the towboat typically pushes 15 barges (3 barges wide and 5 rows long = 15 total barges) filled with a wide variety of bulk products, both dry and liquid, such as coal, fertilizer, petroleum etc. Carrying annually 50 million tons of cargo by the Falls, the modern towboats and barges are a

dynamic leap in boat technology and commerce from the time about 400 years ago when only canoes navigated the Ohio River. Today, all boats bypass the Falls through the Portland Canal.

On the other side of the canoe, the *Converging Cultures* theme is explored further. There is another Native American red glass platter from Angel Mounds with more concentric sun circles and repetitious geometric designs. Stand where you can see its appealing designs backlit, highlighting its features in a appealing way.

“I am especially pleased that the sandblasted images on the glass platters of the Native American designs turned out so dynamic,” adds Brook.” We added some gold paint to enhance the design.”

Alongside is another blue glass platter symbolizing once again the many forms of water. The best views of today’s falls or rapids occur generally in the wet months November to June, when the river is high and tremendous amounts of water rush through the open McAlpine Dam gates. In the 1800s, many steamboats “shot the rapids” during the high-water season. During the dry months from July to October, the river water gently flows over the fossil beds.

The 3rd glass platter on the canoe is a silhouetted white skyline image on a black background of Louisville, (which is located across the Ohio River in Kentucky), the first “Falls City”, established above the Falls on Corn Island in 1778. It prospered as a commercial river port, growing to be one of the largest cities on the Ohio River. Today the population of the “Falls Cities” metropolitan area on the Kentucky and Indiana sides of the river totals nearly 1.2 million people.

Suspended under the canoe are numerous, blue-colored pieces of glass representing ripples of water.

For the *Falls Today* theme, it is most appropriate that the centerpiece of the sculpture is the dazzling, falling water chandelier of the Falls of the Ohio River, an assembly of multi-colored blue water drops, cascading downward. The original Falls extended about 2 miles, pouring over a riverbed that dropped 26 feet thus creating a series of rapids. The biggest waterfall had a drop of about 8 feet. The combined weight of all the glass water drops is around 275 pounds. Consequently, with millions of gallons of water rushing by the Falls Center every day, it is most appropriate that the artist created a glass sculpture with water drops falling. Try standing beneath the water drops, look upward and it seems that it is showering down upon you. (See the separate [Exploring the Falls Rotunda Sculpture](#) activity sheet, question 1: How many waterdrops in total are there?)

“One change I made in the original design is that I made the water sculpture much longer,” noted Brook. “That way, it fills the space better, and it becomes more of a focal point. Without water, there would be no falls.”

The Falls of the Ohio was formerly two miles long and this obstacle to navigation is the reason why the surrounding 6 “Falls Cities” were established here as river ports above and below the falls or rapids. (On the Kentucky side: Louisville, Shippingport, Portland; on the Indiana side: Jeffersonville, Clarksville and New Albany).

Also suspended from this “arc of time” are a sun, a moon and some stars, symbolizing the passage of time and the shaping of the planet. The brilliant shining sun radiates with yellow, red and orange rays bursting outward, displaying its fiery power and an explosion of tremendous energy.

Brook felt the most surprising element was the sun. “On paper, the sun design was much smaller,” observed Brook. “But when it was completed, it was far larger and more dynamic than I anticipated. It is

also denser and more intense. I am very happy with it. It expresses vividly the fiery power of the sun".
([See exploration activity sheet question 2: Estimate the weight of the sun sculpture](#))

Hanging on the other end of the arc, the gray moon is composed of numerous speckled gray glass platters, mimicking the surface of the moon. Notice that one platter has a boot print on it, recalling the first step of humans on the moon by astronaut Neil Armstrong in 1969-- "one small step for man; one giant leap for mankind."

"I never have tried to make a moon composed of glass platters before, so it was an experiment," noted Brook "I attached glass platters to an internal metal mesh sphere. The platters are like the craters of the moon. In this way, it also looks very different than the sun and the waterfall."

Above the sun and the moon, there are 10 glass stars of multiple colors. (amber, white, green, red, yellow, white, iridescent blue, white and blue). They do not twinkle, but reflect playfully light and movement ([See exploration activity sheet question 3: Which one of the ten stars is far different than the rest? Hint: It doesn't reflect a color and you can't see through it](#)).

"My favorite piece in the entire structure is probably the fossil mobile because the images are so realistic and it balances and moves well," observed Brook. "There are 3 independently balanced mobiles under the waves arc".

Moments after viewing the entire sculpture suspended from the rotunda ceiling for the first time, Brook sighed, "I am relieved that the scale of the sculpture works well in this enormous space." Concluding with a smile, "I am humbled and somewhat in awe of seeing this project completed. I am overwhelmed to have this complex piece completely finished. It is grander in scale and concept than anything that I have ever attempted before. The process of conception to completion was rather magical and was made possible by the help of a wonderful and talented team, resulting in a profound experience.