

Transforming public art with HDPE

PLASTICS
FABRICATION

by Deborah Wright

Phillip K. Smith, III is part artist, part architect and part designer. His education at the Rhode Island School of Design in Providence, RI, USA, resulted in both a Bachelor's of Fine Arts and a Bachelor's of Architecture. In 2000, Smith returned to his roots in the Southern California desert of Palm Springs, CA, USA, where he established The Art Office, his studio for art, architecture and design. Since then, he has been working to blur these disciplines through his various projects that range from architecture to custom furniture to site planning to public art.

Smith said, "My eye gravitates toward simple geometry and precision, while my hand melds the human touch to my ideas. The colors, forms and growth patterns of nature beautifully mesh precision with the organic and are a constant inspiration for me." Though he approaches each project with the background of his own artistic vision, Smith finds precise inspiration in the realities and parameters of a site. "Site specificity is crucial for the success of a project. It's my hope that my sculptures open the public's eyes to their surroundings, allowing them to experience the places in which they work, live and play in fresh, new ways."

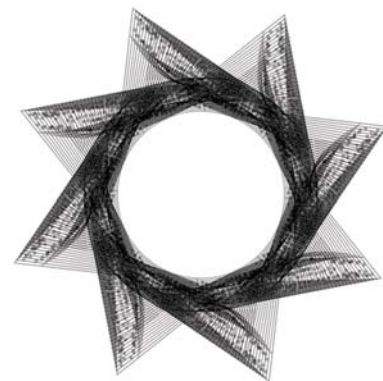


Stack of custom produced 2" thick HDPE by Polymer Industries.

Creation of the "Transformed Flower"

In late 2006, Annette Bloch was in the process of planning the renovation of the original 1980s Richard and Annette Bloch Cancer Survivors Park in Kansas City, MO, USA. These series of parks grew out of the diagnosis of Richard Bloch, co-founder and honorary chairman of the board of H & R Block Inc., with "terminal" lung cancer in 1978. With the help of doctors who said he could beat the cancer, his wife, Annette, as well as his own determination, Bloch waged a bitter two-year war on the insidious disease. So dramatic was his fight and recovery that Bloch and his wife devoted their lives to helping others stricken with cancer. Their foundation helps people diagnosed with cancer have the best chance of beating it as easily as possible. Through their foundation and now 24 cancer survivor parks located throughout the United States and Canada, the Bloch's have had a profound impact.

Annette Bloch initially met Smith through the Palm Springs Art Museum, where he was the founding chairman of the Architecture and Design Council. "Annette wanted a centerpiece for the renovated park — something that would powerfully catch your eye. She wanted a sculpture that would be 'inspiring, colorful and that would shine brightly at night,'" said Smith. When he visited the site for the first time, Smith remembers sketching an image immediately. "I knew that I wanted the words 'hope' and 'transformation' to guide the concept of the piece, but I did not expect to draw so precisely what the sculpture should look like when I was on-site for the first time — that was very exciting!" Over the following week, that initial sketch was detailed, brought into the computer, and a 3-D model of the sculpture was created. "The creation and transformation of a flower inspired this sculpture," Smith explained. "From the stem, to the bud, to the brilliance of a bloom, the flower is a metaphor for hope and transformation."



CAD drawing of the sculpture's individual layers and parts showing the transformation from a circle to an 8-pointed star.

Within its site, the sculpture, titled "Transformed Flower," would interact with the visitors of the park, the passing traffic, a 5-way intersection, and the residents and employees inhabiting the 8- to 12-story buildings encircling the park. In his material research, Smith needed to find a product that would be able to hold up in the harsh Kansas City climate, withstand potential abuse from the public, and that would be color integral to avoid paint and continuous maintenance. "We also wanted to build this project ourselves, which would mean breaking down the overall form into individual parts."



The custom made 2" thick HDPE sheets were CNC milled to create the 720 parts of the sculpture.



Every part was CNC milled, pre-drilled, coded and then hand routed to remove sharp edges.

Plastic material design solution for unique sculpture

Smith's research for the ideal sculpture material led him to UV-resistant high density polyethylene (HDPE). The material could be formed at the desired sheet thickness of 2" and could be milled easily and precisely. Through the help of his plastics distributor and fabricator, Industrial Plastic Supply Inc., Anaheim, CA, USA, Smith became more familiar with the material and began the process of convincing his client and the Kansas City Arts Commission.

Smith said, "Using HDPE was controversial from the perspective of the KC Arts Commission. There was no precedent that could relate to this project. It was difficult to understand that a material used for bathroom partitions, decks of boats and playground equipment could also be used for public art."

After long discussions and an endorsement of the material and its durability by his client, Smith gained his necessary



Smith's associate, Burzeen Contractor, organizing HDPE parts for on-site assembly.

approvals and began the fabrication process. "The form is complicated," he said. "It begins as a perfect circle at the base and then twists 45 degrees and opens to become an 8-pointed star." Using the computer model, the form was sliced into 90 layers with eight identical parts per layer for a total of 720 parts. "Using CAD to CNC interface, each part was custom milled, pre-drilled, coded and color coordinated — like one big erector set."

Smith built the lower half of the sculpture in his Indio studio, where it was then shipped to the site and secured to its foundation. The upper half was built on-site piece by piece on a scissor lift. "We had allowed for six days of assembly on site, but it only took us three days, thanks to the precision of the milling and the success of our computer model." About 3,800 stainless steel lag screws later, the lights were turned on and Transformed Flower came to life.



Using a scissor lift on-site, each plastic part could be accessed and mechanically fastened.

Conclusion

The sculpture and the newly renovated park were dedicated at the annual National Cancer Survivors Day Rally on July 7, 2008. Smith said, "After the design and the hard work of the assembly and installation, it was incredibly humbling to be approached by cancer survivors thanking me for our work ... thanking us for creating a visible source of inspiration for cancer survivors in their daily lives."

Smith added, "Transformed Flower was an eye-opening project for me in terms of the potential of material. HDPE is incredibly adaptive to the creative process. It is my desire to take what I learned on that project and create other large-scale HDPE



From top to bottom, "Transformed Flower" opens, closes, changes shape, twists and pixelates from red to orange to yellow to white.

projects in the United States that push the potential of this material. I want to set the precedent for other artists looking to use HDPE." ■

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The "Transformed Flower" seeks to be a positive inspiration for transformation and hope in the hearts of all who experience the Richard and Annette Bloch Cancer Survivors Park in Kansas City, MO, USA.