

Swing Time

Rotationally Molded Swings for *The Lawn on D*

by Susan Gibson, JSJ Productions, Inc.

Swing Time is a rotationally molded, interactive, and light-enabled swing that is uniquely tailored to the user. The hugely successful project, commissioned by the Massachusetts Convention Center Authority (MCCA), was designed by award-winning Höweler + Yoon Architecture of Boston, MA and rotomolded by Gregstrom Corporation of Woburn, MA.

The challenge was to create an interactive space for residents in an urban setting and reflect the playful nature and purpose of *The Lawn on D* — a contemporary sculpture park bordering on the Boston Convention and Exhibition Center and D Street on the city's southern waterfront. "The swing's responsive play elements invite users to interact with the swings and with each other, activating the urban park and creating a community laboratory in the Innovation District and South Boston neighborhoods," said principal architect Eric Höweler.

The MCCA was looking for a "people experience" as a temporary expo and part of the future development of *The Lawn on D*. Real estate development around the area was in early stages, therefore the intent was to create a temporary space that would draw people to a public place of interaction — somewhat like the Hi-Line does in New York City. "Activation" had become the buzz word of the day, so the space would need to be cool, interactive, beautiful, and lightly sculptured.

When Höweler + Yoon first looked at the project, they wanted to incorporate playfulness. They initially imagined designing merry-go-rounds, seesaws, or jungle gyms. After trying all sorts of playground elements, the swing emerged from the concept of "swings and hammocks" and incorporating the idea of micro-controllers to allow the swing to know when it is being used so it could light up and change colors. In this way, the swing would provide a bit of feedback and pleasure to the user. They envisaged something like a vineyard full of swings hanging from a canopy above or a field of swings.

Initially the swings were manufactured from fabricated polypropylene (PP) sheets welded together and CNC machined to produce a triangular cross-section. However, the first swings were so wildly popular and over used they began to break and ultimately they failed. Looking at the swing's construction, point of impact, and overwhelming popularity, Höweler + Yoon realized they were not up to the wear and tear they were undergoing. They also realized one day soon a hotel would be built around the park, the area would continue to develop, and the swings would continue to increase in use and popularity.

In 2016, Höweler + Yoon began designing the second-generation swings, Swing Time 2.0. It was clear this time around that the swings would need to facilitate more robust treatment and wear and

tear. The designers conferred with MCCA about manufacturing them with rotational molding and received their full approval. They then contacted Jim Leitz, Vice President of Marketing for Gregstrom Corporation. "This was a fun project because it was a big deal in Boston and important to the success of *The Lawn on D*," said Leitz.

Gregstrom quoted the job in February and in March a purchase order was issued for the production and delivery of the swings in just 8 weeks. The swings would need to be installed at *The Lawn on D* in time for the 2016 Memorial Day holiday.

Gregstrom contacted Sandy Saccia of Norstar Aluminum Molds because they knew Norstar could deliver the required tooling on time, which would allow them to deliver the swings by the required date.





“Any molded product that comes in contact with people in a public environment is always fun to work on, and in some cases challenging. Not only part aesthetics, but because this product had to be completed in time for a planned public event, parts were needed on a specific date so timing for mold delivery was critical on this project,” said Sandy Scaccia, President of Norstar Aluminum Molds.

Norstar opted to make this mold with their time saving pattern-less process, thus eliminating the pattern making and approval steps, which allowed them to go immediately into the mold making process and meet the required delivery date. “We are always trying to come up with creative solutions for tooling projects and our pattern-less process was a very good solution to the critical delivery necessary in this case. This was a fascinating and fun project and we were very pleased to be part of it,” said Scaccia.

One of the unique aspects of manufacturing the swings for Gregstrom was the addition of a steel bushing to hold the Clevis pin on which the swing is supported and rotates. The swing’s weight capacity is 350 lbs. The bushing is inserted just as the part comes out of the mold and is still hot. As the plastic cools, it then surrounds the bushing further ensuring its strength and weight capacity,” said Leitz. The swings are molded with LLDPE with a 6-melt density index and an overall ¼” wall thickness. The swings are rotomolded on a Ferry 220S 4-ARM Carrousel, and a 2 ¼” x 3 ½” hole is cut near the steel bushing to allow for the insertion of electronics, enabling the swings to change colors from a white glow to blues and purples. A MAUS coating is put on the mold by Norstar, which is what gives the part its



perfect gloss. “Every facet of the process was well planned and streamlined, and the second part out of the mold was a success. It is fun and rewarding to work on a project like this with such good suppliers and customers and have everything come together perfectly,” said Leitz.

As promised, the 2.0 generation swings were delivered and installed in 8 weeks. The 2016 Memorial Day weekend at *The Lawn on D* was a resounding success.

It was clear from the beginning that Höweler + Yoon had a great client that pushed them to make the project an ‘off the grid’ experience in a public space, both beautiful and sustainable. They wanted it to be sustainable to make people more aware of sustainability and conservation of energy. The ‘Eco Literacy’ component was important to its success.

People just kept coming back and back and it became clear that the swings would undergo yet another upgrade, Swing Time 3.0, in 2017. This time Höweler + Yoon re-introduced how power was integrated into the swings by incorporating solar energy in an ‘off the grid’ approach to powering color to the swings.

Today, the area around *The Lawn on D* is a developed neighborhood, and much of its enormous success is attributed to the over-whelming success of Swing Time. The park has become a Boston landmark. “New York City is known for its skyline, but Boston has *The Lawn on D* with its cool, interactive, and non-traditional Swing Time,” said Höweler.

Looking to the future, Höweler + Yoon are investigating producing these swings for individual consumers, but this will depend on being able to produce and market them cost effectively for individual consumption. Swing Time is patent pending in the US, Europe, and China.

Looking to the next generation of the swing, MCCA has charged Höweler + Yoon to come up with new ideas based on the popularity of Swing Time. While still in very early stages, the designers are looking at developing a more commercial swing that would seat 2 or 3 people creating an even greater level of interactivity.

Höweler + Yoon Architecture

Architecture and design studio Höweler + Yoon was founded by Eric Höweler and Meejin Yoon. Their multi-disciplinary practice operates in the space between architecture, art, and landscape. “We believe in an embodied experience of architecture, seeing media as material and its effects as palpable elements of architectural speculation. While our work lies at the intersection of the conceptual and the corporeal, we are committed to both the practice of and prospects for architecture,” said Eric Höweler. Engaged in projects of all scales, Höweler + Yoon is interested in the material realities and material effects of their work. From concept to construct, they are determined to realize the built idea and to test projects through the dynamic interaction between the construct and the larger public arena.

Meejin Yoon AIA FAAR, born in Seoul, Korea, is an architect, designer, and educator. She is a Professor and Head of the Department of Architecture at the Massachusetts Institute of Technology (MIT), where she received the Irwin Sizer Award for



the Most Significant Improvement to MIT Education. Recently, Meejin was awarded Architectural Review's New Generation Design Leadership Award. Prior to founding Höweler + Yoon, Meejin received a Bachelor of Architecture from Cornell University with the AIA Henry Adams Medal in 1995, a Masters of Architecture in Urban Design with Distinction from Harvard University in 1997, and a Fulbright Fellowship to Korea in 1998.

Eric Höweler AIA, LEED AP, born in Cali, Columbia, is a registered architect with over 20 years of experience in practice. He received a Bachelor of Architecture and a Masters of Architecture from Cornell University and is currently an Associate Professor at the Harvard Graduate School of Design. Prior to forming Höweler + Yoon Architecture, Eric was a Senior Designer at Diller + Scofidio where he worked on the Institute of Contemporary Art in Boston and the Juilliard School/ Lincoln Center in New York. As an Associate Principal at Kohn Pedersen Fox Associates, Eric acted as the senior designer on the 118 story ICC Tower in Hong Kong.


Eric and Meejin met in 1990 as architecture students and started their practice together in 1995, initially running design competitions. They have been engaged in many interesting projects over the years including designing: pop-up library spaces utilizing the rotational molding process; a project for the Athens Olympics involving light and media; a porcupine dress that bristles with light sensors defining personal space; the MIT Museum, a 50,000 square foot building that incorporates elements of fun ideas and interactivity; and a submarine project for a public arts display on the Schuylkill River that allows people


to walk onto a barge, look into the river from eye level, and see and study animal life and the environment; among many others.

Höweler + Yoon's design studio, located in the Leather District of Boston, is home to 18 designers and employees. Included in their design facilities, is their own workshop complete with equipment, including a rotational molding machine, for building prototypes and bringing one-off products to realization. With one foot in academia, Höweler + Yoon is speculative and research oriented. They enjoy studying public space and interactivity, and they especially like projects with a playful side.

Höweler + Yoon has earned numerous awards for their design work including: New Generation Design Leadership Award. Architectural Review (2015); Finalist Mies Crown Hall America's Prize (2014); Merit Award AIA Washington, D.C. (2013); Audi Urban Futures Award (2012); the United States Artist Award in Architecture and Design (2008), Architecture Record's Design Vanguard Award and the Architecture League's Emerging Voices Award (2007); and the Rome Prize in Design (2005), among others.

Projects by Howeler + Yoon have been exhibited at the Museum of Modern Art in New York, the Guggenheim Museum in New York, the Los Angeles Museum of Contemporary Art, the Museum of Contemporary Art in Chicago, the Smithsonian Cooper-Hewitt National Design Museum in New York, the Institut Valencia d'Art Modern in Spain, and the National Art Center in Tokyo.

For more information, contact Höweler + Yoon Architecture, LLP, 150 Lincoln St. 3A, Boston, MA 0211, P/F: 617.517.4101, or go to www.howeleryoon.com 



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Meejin Yoon and Eric Höweler