

## **The Urchins**

iLight Marina Bay, Singapore (2017)

### **Designer:**

Jin Choi and Thomas Shine of Choi+Shine Architects

### **Quick Facts**

The Urchins were created in response to a call for art for the 2017 iLight Marina Bay festival in Singapore, which had the theme of biomimicry and sustainability.

This project is inspired by sea urchin shells, which are enclosed yet light weight, delicate and open. Their textured and permeable surface interacting with light creates openness, while the pattern's mathematical repetition brings visual rhythm and harmony. Against light, the sea urchin's natural form reveals one of the most spectacular patterns found in nature.

The project mimics this orderly, repetitive pattern and soft forms, achieving a visual harmony from the contrast between nature and the man-made environment, and between the firmly grounded masculine skyscrapers and the hovering feminine object.

Each Urchin consists of a hand crochet fabric shell held in tension over an aluminum frame that is suspended with Dyneema cables. The cables fasten to structural supports holding the Urchins in place. Because the structure is light weight, the suspending cables are thin, and barely visible during the day.

The crochet fabric shell is constructed of UV and weather resistant 3mm white double braided polyester chord, illuminated by multiple white spot lights, creating the illusion of an evenly glowing structure. Each Urchins skin is use about 17.000 meters ( about 10.5 miles) of polyester cord, with each urchin weighing about 100kg (220 pounds).

The Urchins were designed for simple installation, and are composed of 20 segmented panels, which are joined to a series of metal ribs at ground level at the site, and later fastened to a top and bottom ring once suspended. Once assembled, the Urchins are hoisted to the final display height and secured in place.

The Urchins were installed in Marina Bay in Singapore from March 3rd to March 26th, 2017. Approximately 500,000 people visited the festival.

### **Project Concept Statement**

The Urchins aimed to create a sense of place with an intricate, calm and simple object. The mysteriously glowing lace Urchins, hovering above the water, contrasting the skyscrapers, create a sense of place that is unique to Singapore.

The lace symbolically weaves different people and cultures, while physically, the openings in the surface create patterns of light against the sky, water and city, a juxtaposition of a permeable surface on different visual layers.

Generally, lace is small in scale, and often private. Shown in a large scale in a public place, it creates a sense of surprise and memory of the space. Lace is used as an embellishment for a special celebration. The softly glowing, hovering lace Urchins create visual poetry celebrating the cultural diversity of Singapore.

The Urchins were designed to interact with natural light during the day, and glow when illuminated at night. At night, the mysteriously hovering and glowing large Urchins create a sense of magic as if time has stopped. When viewers enter into the Urchins, they will be surrounded by a single layer of glowing, lacy surface, where they can enjoy the detail and texture of the Urchins and see the city, water and the sky through this visual filter. When other viewers see the occupants in the Urchins, the occupants will glow within the lacy room, creating an illusion of ethereal levitation of the occupants, while the occupants become a part of the art work.

During the day, the crocheted surface of the Urchins reflects, absorb and retransmit sunlight. In the morning or late afternoon sun, the Urchins appear as glowing, translucent object. During the full day sun, the lightweight and yet huge lace urchins cast intricate, patterned shadows, creating both a pleasant visual experience and providing a small shelter from the hot sun.

The Urchins create an interesting theatrical relationship of the seers and the seen. Viewers inside the Urchins are staged as part of the artwork while viewers outside will become spectators of the occupants of the artwork. This relationship can be reversed when the occupants see the city and the people outside the Urchins framed as artwork captured in each openings of the lace.

The Urchins also respond to the wind and touch of the viewers. The Urchins and their shadows rotate or move in the air slowly as if they are pendulums without visible connection or the cable. The rhythmic and repetitive movement of the Urchins creates a sense of time and contribute to the tranquil and silent poetry of the sculpture.

Seeing the mysteriously hovering and glowing large lacy objects against majestic skyscrapers and dark water stop the viewers to gaze. This momentary pause of the mundane routine of our life would hopefully give us an opportunity to find the poetry around us.

### **Fabrication**

The design development took about two and a half months. It involved developing the pattern of the lace and supporting structure for fabrication.

Most of original lace patterns are from Gilmond's Needlepoint Made Lace published in 1890 and modified by Jin Choi to use crochet as a method of lace making instead of

needlepoint. She then invented the patterns for the urchins to create a desired form, and give each urchin the right amount of openness, texture and density.

The fabrication and assembly of crochet surface and supporting structure took another two and a half months. Crocheting the surface was a very labor intensive work, which involved 50 people all over the world (listed below).

The preliminary fabrication took place in Boston, and consisted of organizing each crocheter's work and later assembling the hand made pieces into a single fabric skin for each Urchin.

The metal frame for the Urchins was designed and fabricated in Massachusetts and shipped with the fabric skins on a 1m x1m pallet. The three urchins were installed in Singapore over a four day period, assembling each frame into a 3m x 5 m (10 ft x 15 ft) light-weight structure to support the fabric shell, which were attached to the frame at the site.

**Steel Fabrication:**

Modern Metal Solutions

**Assembly Crew in Boston:**

Thomas Shine, Susie Kim, Myungsu Ko, Yeseul Choi, Isabelle Lippincott, Hyokyung Lee

**Installation Crew in Singapore:**

Thomas Shine, Jin Choi, Young-eun Choi, Jaekyu Lee, SoYeung Ko, XiaoMin, Hyosoo Lee

**Structural Consultant:**

Árni Björn Jónasson, ARA Engineering

**Installation Support:**

iLight Marina Bay

**Crocheters:**

Jin Choi, Sophie Cho, Hyokyung Lee, Patti Murphy, JungHee Suh, Kyula Whang, Miriam Robinson, Insuk Durham, Mirto Golino, Janet Griffin, Nancy Belmudes-Gambill, Dianna Smith, Sandra Feldten, Natalie Weichel, Deidra DePagter Ball, Sue Babbs, Victoria Kruse, Patty Foley, Rose Nissen, Peihan Orestes, Jena Duncan, Elida Fejzaj, Eunhye Kim, Mijeong Takahashi, Concetta Phillipps, Mary Blumestien, Cheryl Blair, Kelly Ran, Corina Palmer, Melinda Burnett, Nora Hill, Sara Gregory, Priscilla Alarcon, Paige Henderson, Renata Carvalho, Effy Basset, Nicole Ranta, Sammi Elliot, Helena Kang, Cindy Ralston, Jen Serwitz, Lillian Hughes, Heather Cap, Faith Taylor, Laura Finder, Lindsey Walsworth, Pam Bee-Lindgren, Priscilla Smith, Amiee Dill, Ashlee Deetz Schleicher, Coty Colson,

**ABOUT CHOI+SHINE ARCHITECTS**

Choi+Shine Architects is an internationally awarded design studio established by Jin Choi and Thomas Shine. Their works have appeared in museums and galleries worldwide and are best known for “The Land of Giants”, a human shaped transmission towers, scheduled for construction in Iceland in 2017, “The Lace” their 150 sq. m. hand crocheted work for the 2016-2017 Amsterdam Light Festival, and The BIT Light, an innovative, award winning magnetically coupled lighting system.

**Jin Choi**

holds a MFA in Architectural Art, and an M.Arch from Yale University. Her work has been published and exhibited worldwide, including the V&A in London. In 2013 she was selected by The Korean Institute of Architects as a “Global Young Architect”. She is the co-inventor of several patented works with Thomas Shine.

**Thomas Shine**

is a structural artist and received his B.Arch and M.Arch from Yale University and taught

Architectural Structures at Yale. Before studying architecture, he worked in biotechnology in London, and later ran a firm developing medical equipment. He is the co-inventor of several patented works with Jin Choi.

### **Contact**

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The Urchins website is <http://choishine.com/urchins.html>

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