





MeeFog[™] Sculpture Welcomes Visitors to New San Francisco Exploratorium

BENEFITS

- Replicates natural fog with plumelike clouds
- Four high-pressure pumps direct water to an array of 832 specially designed nozzles
- Anemometer and computer program produce the right amount of fog depending on weather conditions

CHALLENGE

The Exploratorium wanted an inaugural artwork for its Over the Water series to attract interest and draw visitors to its new location.

SOLUTION

They selected Japanese artist Fujiko Nakaya to create a fog sculpture along a bridge connecting Piers 15 and 17.

The Exploratorium San Francisco, California

Since 1969, San Francisco's Exploratorium has sat at the intersection of art, science and human perception. Founded by experimental physicist and educator Frank Oppenheimer, the Exploratorium's hands-on exhibits explore biology, physics, listening, cognition, visual perception, social behavior, and the environment. In addition to 550 employees, a quarter of them Ph.D.s, the Exploratorium has hosted 250 artists in residence.

In 2013, the Exploratorium moved from its original location in the Palace of Fine Arts to Pier 15 on the downtown San Francisco waterfront. The museum now has 330,000 square feet of indoor and outdoor space, three times what it had formerly.



Fujiko Nakaya's sculpture along a bridge linking Piers 15 and 17 in San Francisco.

Opening Exhibition

As part of the opening celebration, the Exploratorium commissioned renowned artist, Fujiko Nakaya, to create Fog Bridge, a fog sculpture along a bridge linking Piers 15 and 17.

"On a pure physical level this piece is simply water floating in air, interacting with light," says Exploratorium Director of Exhibits, Tom Rockwell. "But add a human witness and it becomes a dynamic art piece, one that sculpts fog, air, and light for visual and sensorial pleasure."

Collaborations between Mee Industries and Fujiko Nakaya continued throughout the years including a permanent installation at the Guggenheim Bilbao Museum and a temporary one for Paris's Nuit Blanche (White Night) celebration along the Champs Elysee in 2013.

"Fog Bridge is an homage to San Francisco, recalling the beautiful experience of the city's fog," says Nakaya. "It is like talking to nature and nature giving you back more than you can imagine."

Artist Background

Fujiko Nakaya was born in Sapporo, Japan, in 1933. Her father, physicist Ukichiro Nakaya, is renowned for among other things, creating the first artificial snow in his laboratory at Hokkaido University. But Fujiko Nakaya chose

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to spend her life working with water that was in motion, rather than frozen, creating sculptures out of artificial fog.

Nakaya's work with fog sculptures began when Experiments in Art and Technology (E.A.T.), founded by Bell Laboratories engineer Billy Kluver and artist Robert Rauschenberg, was working on the design of the Pepsi Pavilion for Expo '70 in Osaka, Japan. E.A.T. had decided to create an artificial cloud to surround the building and enlisted Nakaya to oversee that project due to her connections with the meteorological community through her father's work. While the clouds could be produced chemically, Nakaya wanted to produce the effect using water, something which had never been done. Kluver put her in contact with cloud physicist Thomas Mee, Jr., a former Cornell University researcher, then living in southern California.

The problem was how to create water droplets of the right size so that they would have characteristics similar to natural fog: remaining suspended in the air, rather than immediately falling to earth. Conducting experiments in his back yard, Mee developed the technology necessary to create the first water-based artificial fog.

The technology consists of using high pressure pumps to direct the water through a series of tubes to an array of specially designed nozzles. The water then sprays through a tiny .006" orifice and immediately strikes the point of a pin, which splits the water stream into billions of minute droplets with diameters in the range of 15 to 20 microns.



Fujiko Nakaya's France-based fog sculpture, Sea Cloud, also uses MeeFog[®] technology.

The Installation

Mee installed four high-pressure pumps to direct water to an array of 832 specially designed nozzles placed along the bridge. An anemometer was installed to measure the wind speed and a computer program controls the pumps to create the right amount of fog depending on weather conditions.

"We love being able to continue our collaboration with Ms. Nakaya in creating these sculptures," says Mee Industries CEO Thomas Mee III. "Most of our fogging systems are used for industrial purposes and hidden away inside ducts or buildings, but her sculptures allow millions of people around the world to appreciate fog's natural beauty."

While Fog Bridge was originally scheduled to close October 2013, due to its popularity the Exploratorium wanted to extend the exhibition. To make this possible, Mee Industries donated the equipment so that visitors can continue to experience the fog sculpture indefinitely.

Two artists and a professor of the collaborative organization, E.A.T. Right to left: Fujiko Nakaya, Elsa Garmire, Julie Martin, Bob Garmire (Elsa's husband)



COMPARING DROPLET SIZES



Droplets are spheres. Thinking of them only in terms of diameter can be misleading.

About Mee Industries Inc.

For over 45 years Mee Industries has led the world with innovative water fog technology. MeeFog[™] systems are used to humidify and cool many industrial, commercial and agricultural processes and to create interesting and dynamic special effects. Today there are over ten thousand MeeFog[™] systems in use around the world. The MeeFog[™] team looks forward to helping you with your fogging project.

The Mee Advantage: Experience, Innovation, Performance

In 1969, Thomas Mee Jr. a former Cornell University research scientist, founded Mee Industries. The company originally manufactured high-tech electro-optical, meteorological instrumentation, but by the early 1980's, high-pressure water fogging had become the main focus of the company. Today, Mee Industries provides innovative, highly effective, economical fog solutions for many industrial applications including gas turbine inlet-air fogging, commercial and industrial building humidification and cooling, data center humidification, outdoor air conditioning, greenhouse climate control, wine barrel storage humidification, as well as dynamic special effects for the entertainment industry and theme parks.

Industry Leaders — Focused on Fog Technology

Mee specializes in providing custom-engineered, turn-key high-pressure fog solutions. We are committed to researching, developing, marketing and supporting the most innovative and reliable fog systems available anywhere in the world.

MeeFog™ Systen Applications

RO WATER TREATMENT

SPECIAL EFFECTS

- Amusement Park
- Themed Entertainment
- Zoos, Aquarium
- Fountain Art
- Private Residence
- GAS TURBINE COOLING
- Power Generation
- Oil, Gas, Petrochemica
- Offshore Operations
- HUMIDIFICATION
- Commercial HV
- Manufacturing

EVAPORATIVE COOLING

- Data Center Cooling
- Condenser Cooling
- Heat Exchanger Cooling

GRICULTURE/OTHER

- Greenhouses
- Conservatory
- Wine Barrel Storage
- Cold Storage
- Dust suppressi
- Odor Control
- Cement Curin

HEADQUARTERS

Mee Industries, Inc. 16021 Adelante Street Irwindale, CA 91702 T: 626.359.4550 F: 626.359.4660 www.meefog.com

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