



By Stephanie Harris

# UV in NYC

*If you have spent some time in New York City this summer, you may have noticed something different: waterfalls in the East River. All summer long the city has been displaying an art exhibit, The New York City Waterfalls, featuring man-made waterfalls designed by Danish artist Olafur Eliasson.*

This past spring, four man-made waterfalls were installed in New York Harbor, located at the Brooklyn Bridge, Brooklyn Piers, Governors Island and Pier 35. The public art project, launched by the Public Art Fund, opened in mid-June and runs through mid-October.

### UV & Waterfalls

Six ultraviolet (UV) disinfection systems provided by Aqua Azul Corp. of Hanford, Calif., were installed in the waterfalls, with pumps used to bring water from the East River up to the top of the structures, where the water then falls from heights of 90 to 120 ft back into the river.

“They wanted to disinfect the water before it created the falls,” said Doug Anderson, sales manager for Aqua Azul. “The primary concern was with tourists on boats on the East River—the project designers didn’t want visitors to be exposed to any bacteria from the mist.”

The contractors working on the project did not want to use chemicals for disinfection either, according to Anderson. “They didn’t want to introduce chemicals to the water and fish,” he said. “That’s why they went with UV.”

Aqua Azul designed and assembled the power panels to illuminate the UV lamps used to sterilize the water. Six power panels were used—four of the units illuminate 46 amalgam UV lamps and two illuminate 56 amalgam UV lamps. The Brooklyn Bridge and Governors Island sites each contain two UV units and power panels, while the two smaller waterfalls—Brooklyn Piers and Pier 35—contain just one UV unit and power panel each.

Brackish water from the East River is collected in intake filter pools that are secured underwater and covered in mesh with holes less



than 1 mm in diameter. Filtering the water through the intake pools protects the river’s fish and aquatic life, and the high-intensity 160-watt amalgam UV lamps used to purify the water at a rapid flow rate help to protect the environment.

Pumps then pull water out of the intake filter pools and carry it through pipes to the top of the scaffolding structure, where the water is pushed over a trough and then falls back into the river, creating a waterfall effect. The water is recirculated in the intake filter pools and pumped to the top of the structures as

How UV equipment helped  
create a public art exhibit  
in New York Harbor

the process continually repeats itself to create the cascading falls.

In total, the four waterfalls churn 35,000 gal of water per minute, or 2,100,000 gal per hour.

### Unique Project & Challenges

Working on a project with so many unique parameters presented some challenges for Aqua Azul. "The primary challenge we encountered was the turn-around time—it was fast-paced," said Anderson. "There was a lot of pressure to make the systems, test them, get them on site and then install them."

The entire project took roughly 10 to 12 weeks for Aqua Azul to complete, according to Anderson.

The water of the East River also presented some interesting challenges. "The East River is primarily brackish water," Anderson said. "When the water is pumped up to the height of the scaffolding, there is a lot of wind. As the water falls, it is subject to mist blown by the wind, which became a concern."

In addition, to avoid any potential damage to the electrical units, it was decided to build enclosures for the electrical components that would protect them from the blowing water, Anderson said.

And these power panels and enclosures proved to be a challenge. "We spent a lot of time getting the power panels to comply with New York standards," said Exual Martin, product specialist for Aqua Azul. "The enclosures were made from fiberglass, which brought about a couple of challenges as well. We had to reduce the cost of the power enclosure without jeopardizing safety, while complying with weather protection from humidity as the job required."

The waterfalls were designed to be sensitive to the environment as the structures will not only protect aquatic life, the river and the shoreline, but they will also run on "green" power—electricity generated from renewable resources—while in operation. The waterfalls are shut off at night and turned back on when the exhibit reopens each morning.

The waterfalls will be dismantled when the exhibit ends on Oct. 13. "Most of the projects that we encounter are permanent, whereas this one is temporary," said Anderson. "They're scheduled to break the systems down in October, and [the UV systems] will go into storage. I think they may look for another project to use the equipment on, but it was a temporary use."

The Public Art Fund, working in

partnership with Tishman Construction Corp. of New York, engaged a team of nearly 200 design, engineering and construction professionals to build the waterfalls. Following the deconstruction of the project, 90% of all the materials used

to create the falls will be reused in subsequent construction projects. *wqp*

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