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Janet Echelman
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SCULPTING URBAN AIRSPACE

Janet Echelman

BY REGINA FRANK

If your eye becomes entangled by the beauty of a huge fishing net cast into the vast blue of the sky, it has probably been caught in a work by Janet Echelman. Originally a painter, Echelman has been working with nets since a residency in India. Left without materials when her shipment of supplies went astray, she turned this lucky mishap into inspiration as she watched local fishermen at work. Her first pieces were handmade, knotted by a team of fisherwomen and herself, reflective of communication with her assistants, whose stories she was sharing.

What sounds at first utterly romantic, contemplative, and even meditative has since turned into a multi-million dollar business, a team effort with scientists, software developers, stress analysts, textile developers, landscape and lighting designers, urban planners, architects, and structural, aeronautical, and computational engineers (among the most important Martin/Martin and Peter Heppel). Some of Echelman's public installations span more than 75,000 square feet and influence city silhouettes, functioning as landmarks for thousands of people. Despite the huge planning and production effort, the work appears gracefully effortless. It defies gravity as it dances and flutters, choreographed by currents of air. It makes the winds visible and turns them into form, as we find ourselves watching the clouds, an everlasting ballet between art and nature.

Opposite and above: *Every Beating Second*, 2011. Powder-coated steel, colored fiber, skylights, terrazzo floor, and computer-programmed airflow and colored light, 176.5 x 83.5 x 28.5 ft. 2 details of installation in the San Francisco Airport Terminal 2.



Every Beating Second, 2011. Powder-coated steel, colored fiber, skylights, terrazzo floor, and computer-programmed airflow and colored light, 176.5 x 83.5 x 28.5 ft. Installation in the San Francisco Airport Terminal 2.

Engineered to specific climates in terms of their ability to withstand high winds and snow-loads, some of Echelman's constructions have already held up for seven years, which seems a miracle when you look at their filigree structure. Nature provides clear models for such strength—spider webs enduring loads of water, the system of bones and veins supporting our bodies, and trees bending in the wind and bearing masses of snow. Echelman certainly looks closely at nature as a source of inspiration. While at Harvard University (where she graduated in 1987), she studied evolutionary biology, including the fossil record, particularly a group of one-cell-thick, Precambrian life forms that maximized their surface area. Today, she researches the site of each project. Like a spider, she ties her net and expands her network, involving people from different fields and covering diverse geographical, physical, cultural, political, and historical terrains. The work clearly expands far beyond one person's mind, growing into a collaborative effort, with constant reflections influenced by scientific experience and physical constraints.

For Echelman, there is no separation between art and daily life. The city is her material: her nettings, silently shaping communal space, also function like transcendental threads. They make us look up and reconnect with something larger than us, the superior, the sublime. Public art is a very urban need: with the lack of natural beauty around us, we need reminders of that other existence. Most often, however, public art means a sculpture that we bump into. Echelman, on the other hand, reminds us to look at the sky and makes it almost tangible—she even cuts architecture open to reveal the sky for us. She

mentions Gordon Matta-Clark as an inspiration, which surprised me, because his work is aesthetically so different; but, in terms of making the sky visible, they are in unison.

Echelman also cites "public reaction to Richard Serra's *Tilted Arc*" as another interesting contra-inspiration, saying that it "was a formative part of my development as a sculptor. That sculpture staked out a point on the number line of interacting with the public as an aggressive act. I see my work as a bold yet gentle invitation to enter inside and experience it. Instead of blocking your view and pathway, my work colors your view yet allows you to see the world through it; it changes in response to its environment and allows you to walk beneath and through it." This description was very helpful to my understanding; in fact, I had thought of Serra when I first experienced Echelman's work. Serra's *Berlin Junction*, a narrow path between two giant metal sheets, was one of the first public sculptures that I felt in my gut—my glance instinctively turned to the sky to escape the restricting narrowness created by the barricades at my sides. Though the feeling was induced in a different way, I lost orientation, listening to the wind soaring through the steel, watching the clouds caught in a metal frame; with a slight sense of dizziness, I watched the walls move around me. The strong physicality of the constraining barriers made me feel surprisingly free. I remember leaning against the steel and feeling its warmth, the sun blocked from my eyes as the sky opened above, allowing me to discern the swift movement of framed clouds—two entirely different aesthetic statements having an unexpectedly similar effect.

"Buddhist philosophy about change, equanimity, and the 'full-void' have been an important influence," says Echelman. This becomes apparent when looking at her sculptures, as well as her process. Her way of introducing her work to the public seems technical at first, but titles such as *Every Beating Second*, *Her Secret is Patience*, and *She Changes* suggest a deeper understanding of this way of life.

In the recently completed *Every Beating Second* (2011), at the San Francisco Airport,



Left and right: *Her Secret is Patience*, 2009. Painted galvanized steel, changing sets of recyclable, high-tenacity polyester braided twine netting, and colored lighting, 154 x 353 x 289 ft. Work installed at Civic Space Park, Phoenix, AZ.

Echelman transforms part of Terminal 2 with organic forms that subtly invite viewers to ponder natural forces. In her first commission to float permanently in an enclosed public space, Echelman cut the ceiling open to allow at least a glimpse of the sky. Delicate layers of translucent colored netting descend into wavy flower-like shapes. The normally omnipresent forces of nature are artificially introduced by a computer-programmed, mechanized airflow, which animates the sculptures, “as if the wind could magically flow through solid walls.” And as if the sun could mysteriously penetrate the density of the roof, color is embedded into the terrazzo floor, reflecting the precise shadows that would occur on the summer solstice. On a bright day, sunlight streams through the skylights to cast real shadows that interplay with the inlaid shadows in the floor. At night, a program of colored lighting makes the sculpture glow from indigo to purple, magenta to red-orange.

The combination of artificial wind and lighting with organic form connects to San Francisco as a hub of technological innovation and interconnectivity, as well as a center for sustainable living practices. San Francisco’s hometown airline was the first to order planes with a 30-percent fuel reduction, and Terminal 2 is the first in America to achieve LEED Gold certification.

Echelman’s net forms also bring to mind the city’s past as a prominent player in the fishing industry. At the same time, one might recall flower power and the Beat movement. The title, *Every Beating Second*, refers to a line by poet Allen Ginsberg: “Live / In the physical world / Moment to moment / I must put down / Every recurring thought— / Stop every beating second.”

Water Sky Garden (2009), commissioned for the 2010 Olympic Winter Games in Richmond, Canada, consists of a red boardwalk with intersecting bridges winding through a water garden. Reflections of fine-netted forms paint subtle shapes on the water’s surface and lead the eye up to Echelman’s enormous, wind-activated “sky lanterns.” Inspired by Chinese and Japanese gardens (Richmond has a large number of Asian immigrants), the wooden walkway follows a curving path similar to the choreography of the Dragon Dance, a performance frequently seen in Chinese festivals. Similar to the red lanterns lighting the trail through Vancouver’s Chinatown, they glow at night in vivid colors. Red in Chinese tradition symbolizes the new, honor, fortune, celebration, success, and summoning; one could say that the Olympic Games are one of the strongest examples of such a festive gathering. The Chinese Datong dragon wall comes to mind as well—imagine dragons rising from the waters, playing in the clouds with a fire ball or a large pearl as often depicted in traditional paintings and murals. Nets also have a special relationship to the site. Members of the native Musqueam Band continue to teach their children to fish using nets at this bend in the Fraser River, and the regional fishing industry has employed many ethnic groups. While the thematic program makes its allusions clear, an environmental component remains invisible: this project, a collaboration of artist, urban designer, landscape architect,



1.26, 2010. Spectra® fiber, high-tenacity polyester fiber, and lighting, 230 x 63 x 30 ft. Work installed at Civic Center Park, Denver, CO.

and site team, takes run-off water from the Olympic Oval's five-acre roof and cleans it through an aerating system and specially selected plants.

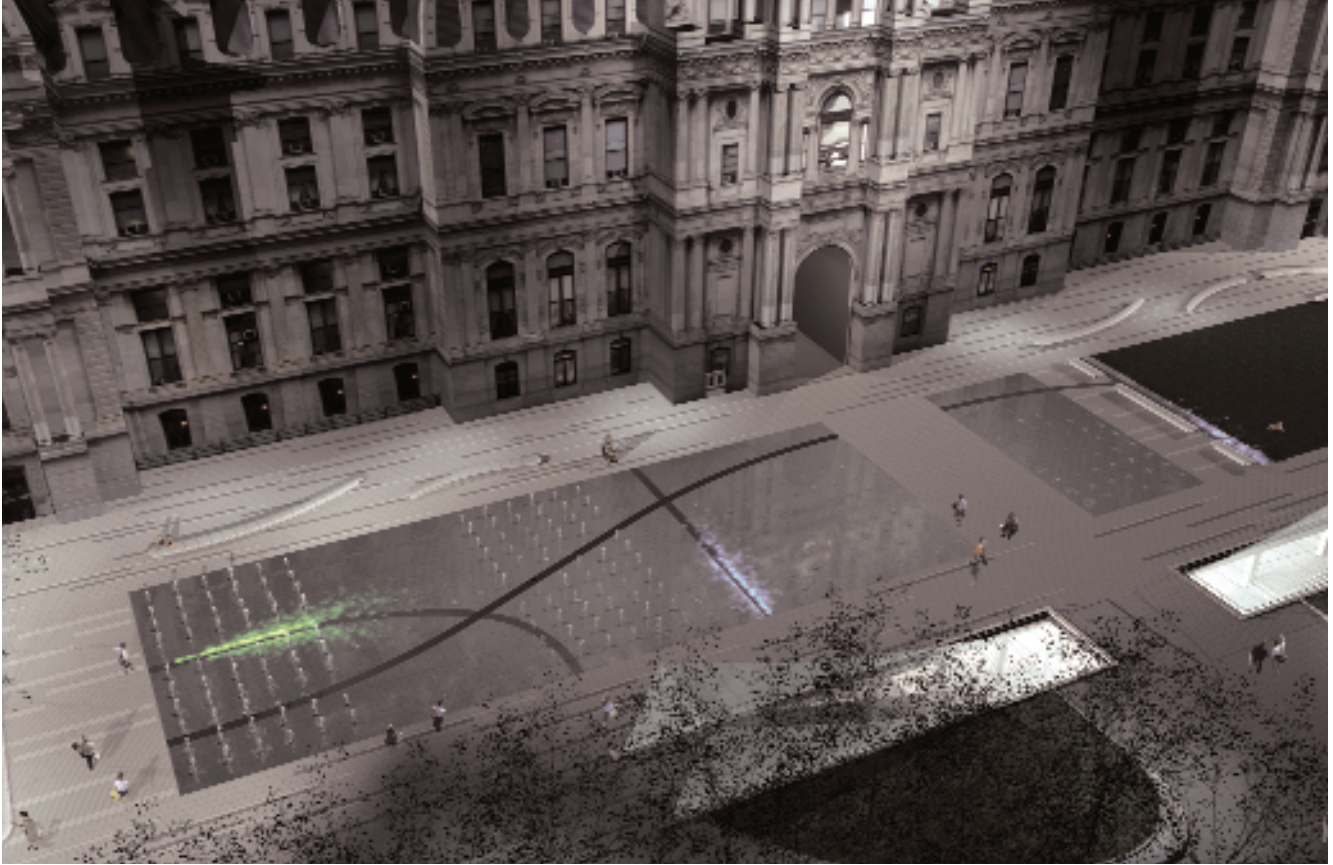
The Expanding Club (2007), created for the Museum of Arts and Design in New York, is one of Echelman's few indoor pieces: "The funnel-like space of the museum's atrium suggested a cloud and with news reports of North Korea's nuclear weapons testing, it became a nuclear mushroom cloud." The work is rendered in the national colors of every country known to have detonated such weapons, in chronological order: the United States, Soviet Union (represented by the Russian flag), United Kingdom, France, People's Republic of China, India, Pakistan, and North Korea. In this work, Echelman is "interpreting the most violent weapon that we humans have ever created, using one of the oldest and most humble techniques of tying things together."

The Expanding Club throws beautiful shadow drawings onto the walls around it, allowing us to see our own shadows cast in them. Using the staircases, we can interact at different floor levels and perceive each other through the netting. The mushroom shape, a funnel-like opening at the bottom level widening into a half-sphere,

with its center almost sucked in like a hose, embodies nuclear explosion. We are all caught and connected when it comes to the desecration of our earth; whether or not we actively participate in its destruction, it will catch us at some point all the same, and we will have to suffer the consequences of our actions.

Her Secret is Patience was installed in 2009, after a long delay. The massive vortex represents the heart of the city of Phoenix and anchors the new downtown Civic Space Park. Inspired by the patterns of desert winds, the sculpture offers visual reminders of monolithic monsoon clouds and the fleeting flowers of Arizona's iconic saguaro cactus. A tornado as much as a shell, this ethereal creation of free-floating netting and steel is another dream catcher. During the day, sunlight projects patterned shadow drawings over the ground and across pedestrian paths. At night, a colored illumination system flowing through sparkling water gradually changes colors from orange via magenta to a bright blue reflected on the different color threads. The three-dimensional, multi-layered form was created by a combination of hand and machine knotting of recyclable high-tenacity colored polyester. "More impressive against a nighttime sky than its daytime backdrop, *Her Secret Is Patience* hypnotically draws people in like moths being sucked into a multi-colored, ever-changing flame," wrote the *Phoenix Times*. It brings to mind the revitalizing function of an oasis in the desert, a past time when this land was covered by shells, and the region's present-day water shortages and dangerous wind formations. The title, which refers to the political process that preceded the installation, is drawn from a statement by 19th-century American transcendentalist poet, philosopher, and essayist Ralph Waldo Emerson: "Adopt the pace of nature; her secret is patience." As Emerson also wrote, "To map out a course of action and follow it to an end requires courage." Echelman audaciously transformed this public space into a symbol visible from afar, and with that, as one viewer states, she gave the city a heart.

1.26, one of Echelman's most successful and breathtaking sculptural endeavors, bridges the ephemeral arts and the visual arts. Perhaps because the fine netting of this spider web clamps to two monumental buildings—the Denver Art Museum and the Greek Theater—it seems even more fragile and subtle than the sculptures that depend on large armatures. Animated by the wind, it casts ever-changing shadows across the surrounding



Proposal for Dilworth Plaza, Philadelphia, expected 2013. Atomized water, compressed air, stainless steel, LEDs, and computerized sensing and control system.

architecture, almost reminiscent of Sol LeWitt's gorgeous wall drawings. The fluidly moving form caresses the rigid surfaces of the buildings, almost as if the fine line light-sketch wanted to dissolve unbending mass. Commissioned to commemorate the inaugural Biennial of the Americas, this 230-foot-long, aerial sculpture explores the interconnectiveness of the 35 nations that make up the Western hemisphere and was realized with a team of award-winning engineers, architects, artists, fabricators, and installers. The title draws its inspiration from a NASA Jet Propulsion Laboratory announcement released only a few months before the installation in early 2010: the February 2010 earthquake in Chile shortened the length of the earth's day by 1.26 microseconds by slightly redistributing the planet's mass. Echelman also investigated National Oceanic and Atmospheric Administration (NOAA) simulations of the ensuing tsunami. She used the three-dimensional form of the tsunami's amplitude rippling across the Pacific as the basis for her sculptural form.

In 2010, Philadelphia's Center City District selected Echelman to create an iconic artwork for the redesign of Dilworth Plaza, a 2.8-acre site adjacent to historic City Hall. For this ambitious endeavor, to be completed by 2013, the artist is not afraid to break new ground for herself. Inspired by the history of the place and the city's association with water, Echelman decided to work with air in its most visible form—atomized water, illuminated by layers of colored light.

Functioning as a continuous, above-ground x-ray of the city's circulatory system, this work will trace the pathways of the three subway lines running below Dilworth Plaza, illuminated with the same colors used by SEPTA to code the transit lines. The movement will occur in real time, using a data feed of train arrivals and departures. Transparent walls of illuminated mist will rise and fall, painting the travelers below into the air above. The beauty of this piece lies in the contrast—even though the same movements are reflected, below ground will remain a place of movement, while above ground will become a place to stay and play, to rest and interact. The interactive aspect of the piece invites viewers to sculpt the air with their own physicality. One dives into the vapor, which will float around the body, and as the fog escapes, the light attaches to the skin and turns it into solid color.

For Echelman, the most interesting aspect of the works in Denver and Philadelphia "is that they first engage the limbic brain, but then they also bring in the neo-cortex

and rational thought and language, as you discover that the forms refer to cycles of nature or culture—in the case of Denver, the movement of a tsunami across an ocean, and in Philadelphia, the pattern of movement of the subway trains beneath your feet. In architecture, this is called indexical. I feel strongly that I never want the indexical content to overtake the non-verbal communication, which is at the core of my art language."

Echelman's work is characteristic of a new type of sculpture bridging the traditional and the innovative, serving the needs of a new generation that perceives the world as increasingly intricate and multi-layered. We can only imagine the impact some of her future projects might have, seeing her proposals for the Louvre (*Marianne's Breast*) and for New York City's High Line Park. I am looking forward to more projects from Echelman and her team as they reflect a different moment in time and project it into the future.

Regina Frank is an artist and writer. Her first book, The Artist is Present, was published in 1999. For more information, visit <www.theartistispresent.net>.