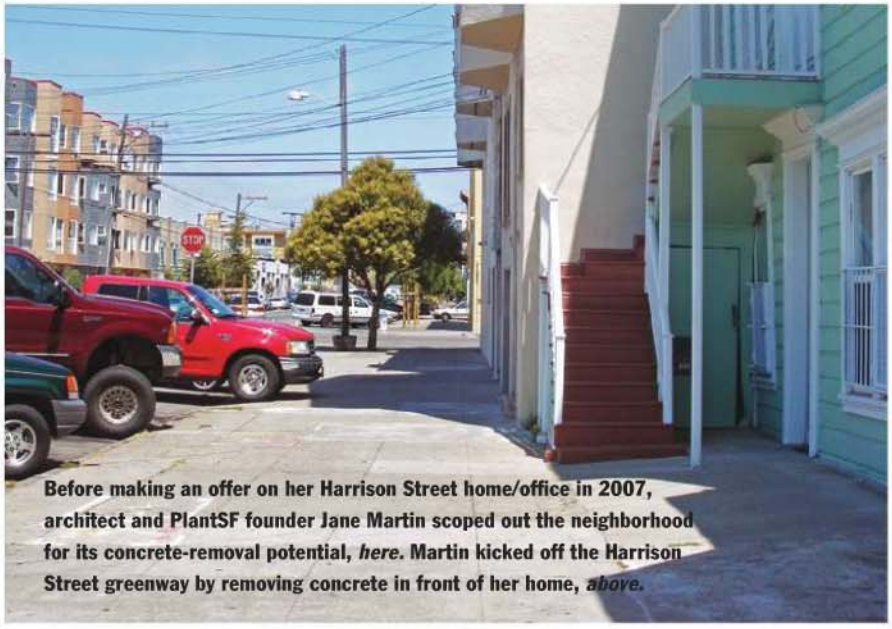
FROM GRAY TO GREEN

A designer depaves San Francisco neighborhoods, encouraging stormwater to sink in and residents to enjoy nature. By Lisa Owens Viani

ALTHOUGH NOMINATED by the National Resources Defense Council as the nation's second-greenest large city in 2009, San Francisco boasts a lot of "gray" to its "green"—as much as 60 to 90 percent of the city is considered impermeable depending on the neighborhood and land use, according to the San Francisco Public Utilities Commission's Rosey Jencks. Large swaths of the city are coated in concrete and asphalt—from doorstep to street in many areas—and the sidewalks are very wide, often up to 15 feet. This surplus of pavement results in flooding problems, especially in low-lying neighborhoods, when the city's combined stormwater/sewer system gets overwhelmed and starts popping manhole covers. It also means that



Before making an offer on her Harrison Street home/office in 2007, architect and PlantSF founder Jane Martin scoped out the neighborhood for its concrete-removal potential, *here*. Martin kicked off the Harrison Street greenway by removing concrete in front of her home, *above*.

COURTESY JANE MARTIN, AFFILIATE ASLA. ALL

On Shotwell Street, Martin's first sidewalk greening project, *above left*, she chose drought-tolerant plants like lavender that also attract bees and butterflies. Prior to her efforts, Shotwell Street was wall-to-wall asphalt and concrete, *above*, and flooded during storms. Succulents and drought-tolerant plants have held up well in the parking strips, *left*. Permeable pavers were also installed.

rain can't infiltrate the ground but instead sheets across pavement, picking up oil, grease, pesticides, and heavy metals and sending them straight into San Francisco Bay. The profusion of pavement also encourages illegal driving and parking on the sidewalks and keeps residents—particularly those who can't easily visit city parks—disconnected from nature. In the 1970s, the author of *Great Streets* and then city planner Allan Jacobs tried to humanize some of the city's widest, most heavily trafficked streets by installing concrete bulb outs, with concrete squares for people to sit on. But while traffic was slowed, 30 years later, the streets were "still bleak," says Jane Martin, Affiliate ASLA, a city resident, architect, and founder of PlantSF *(www.plantsf.org)*.

In 2003, Martin, who hails from the Midwest and "wasn't used to being surrounded by so much concrete," decided to take a jackhammer to the sidewalk in front of her home in the Mission District on low-lying Shotwell Street. She had almost been run over several times by motorists driving on her wide sidewalk and thought that by adding plants she might discourage sidewalk jumping, beautify the front of her house, and "let the ground breathe" a bit. What she didn't anticipate was the bureaucratic hoops she'd have to jump through. To take away six feet of sidewalk—leaving eight feet for pedestrians—Martin had to get both a permit and a variance (because she wanted to take out more than 10 percent of the existing sidewalk), provide a design to the city, and give 30 days' notice to her neighbors within a 150-square-foot radius. (Plus, the permit application had to be notarized.) None of the neighbors objected, Martin paid the $250 fee (which was increased soon afterward to $780) and put her plants in the ground. "Even though the sidewalks are publicly owned, it's your responsibility to maintain them in San Francisco," explains Martin. "Even if you are just repairing your sidewalk, you have to get a permit." Why not just take a guerrilla approach? "I'm a neatnik and a rule follower by nature, but I wanted to do it by the book just to show how ridiculous the process was, how opaque it was to the public, how difficult it was."

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A year later, the combined sewer system backed up in her neighborhood, filling her home with black sludge. But Martin noticed that her garden coped quite well. She decided to expand upon her experience and founded her own advocacy group, PlantSF—or Permeable Landscape as Neighborhood Treasure in San Francisco. Her idea was to both educate other San Francisco residents about the values of permeability and streamline the process of allowing them to create it. Martin met Mayor Gavin Newsom, who liked what she was doing, and in 2005, the San Francisco Parks Trust took PlantSF under its nonprofit umbrella, enabling it to get grant funding. (Newsom later appointed Martin as one of his commissioners on the environment). Martin does not receive a salary from PlantSF; the organization is set up to have low overhead, and since most of its work is focused on education and advocacy,

A few years after Martin's initial project on Shotwell, the Department of Public Works expanded the Shotwell Street plantings into a blocks-long greenway, *left*. Prior to Martin's plantings, *opposite*, the wide Shotwell Street sidewalks were often used for parking and other illegal activities.

she says, the biggest cost is her time, which she gives mostly free of charge. "Demonstration projects that I do are either funded by property owners or are done through grants from the city or other organizations." Martin says the hours she spends on PlantSF projects are "very targeted. My full-time job is as a self-employed architect, landscape designer, and artist. I have no employees, so my time is flexible enough to make it all work."

Since Martin founded PlantSF, her ideas and projects have sent a green ripple through the city. In 2005, the Department of Public Works (DPW) helped expand her initial project on Shotwell, removing an additional 3,300 square feet of concrete on that street and adjoining blocks. The DPW surveyed residents and found that 80 percent agreed with having their pavement removed; a landscape

architect on the DPW's staff then helped implement Martin's design. Martin says her lesson learned at Shotwell was that "if I could make it work here, it would work anywhere. This is a pretty rough 'hood—there's lots of petty theft, vandalism—but the project is still looking good." Today, lemon trees, lavender, and lamb's ears thrive alongside the permeable pavement that was installed; hummingbirds and bees hover in the blossoms.

PlantSF has a grand total of 120 sidewalk gardens created and 30,000 square feet of excess pavement removed to date.

PlantSF's next sidewalk transformation also took place in the Mission District, on Harrison Street, the site of several of Jacobs's concrete bulb outs. Martin had moved to Harrison Street motivated in part, she confesses, by its "gray to green" potential. "I had been looking at the neighborhood to see

how much concrete there was. Before I even made an offer on my house, I'd drawn up a plan." In October 2007, Martin and her new Harrison Street neighbors partnered with the DPW to remove 1,000 square feet of concrete and asphalt in the bulb outs. Another five neighbors added landscaping next to their buildings, for an additional 1,100 square feet of permeable ground. Done on a shoestring budget, and using donations—primarily of natives, succulents, and other plants that can tolerate San Francisco's long summer months without water—the project "became a magnet that pulled people together," says Martin. Some neighbors brought their own plants in what ended up as a "potluck planting." After the first bulb out was finished, an elderly couple slowly toured the site, walking and looking closely at everything, recalls Martin. "They said, 'We've lived here 40 years, and this is the best thing we've seen happen here. At the end of our lives we're so gratified to see this.'" Younger lives were changed too, she says. "The kids are in the garden; they are so in it. Some of them never get to a park. If we didn't have this, they would never see flowers, butterflies." One young girl from the neighborhood asked her whether the plants were real. Another (adult) neighbor who had volunteered to help plant asked whether

At Guerrero Park, created in the middle of an intersection, *opposite,* San Francisco Planning Department staff worked alongside neighbors to plant a raised bed of eucalyptus trees that had been felled in Golden Gate Park for safety reasons. This site on Guerrero where three streets converge *(above,* before) was dangerous for pedestrians and used as a parking lot at night. As part of San Francisco's Pavement to Parks program, Martin transformed it into a botanical garden, *right,* with 20 native and 49 climate-adapted species arranged in three color groups.

the plants needed to be taken out of their plastic pots before being put in the ground.

That first project on Harrison inspired three more phased projects on the street. In the second phase, 23 property owners calling themselves "Mission Roots" got together to replace 3,000 square feet of concrete with plants and trees; the group received $19,600 from a city community challenge grant. The third phase, at the corners of 24th and Harrison, will also remove 3,000 square feet of pavement and involves more than 25 property owners—that project just received funding from the city administrator's grant. And funds for the fourth phase, which will chop up 9,000 square feet of hard surface, are now being raised. Martin has volunteered her services as a designer for all of the phases. Ultimately she hopes to see the Harrison Street Greenway—which she recently rechristened "Plant*Mission," extend along 14 blocks, in a linear series of miniparks.

The Shotwell and Harrison streets sidewalk conversions led to many other similar projects in the Haight, Bayview, Marina, and Sunset districts (all heavily paved), for a grand total of 120 sidewalk gardens created and 30,000 square feet of excess pavement removed to date. Each PlantSF project is as unique as its San

The new Guerrero minipark has slowed traffic and become a gathering place for neighbors, as have many of Martin's other sidewalk greenways.

Francisco neighborhood and its residents. In the "banana belt" Mission District, Martin has used plants from warmer climates with success; in colder, foggier parts of the city, she uses plants that can handle alternating wet and dry conditions, including many succulents. She also uses lots of color in her plantings to stand out against the white wintry backdrop of the foggier districts. Last year, she got another community challenge grant to work in the Sunset District, a section of the city that is paved almost wall to wall. She printed flyers in English, Spanish, and Chinese, soliciting neighbors to convert their sidewalks to "demonstration sidewalk landscaping gardens," and received 145 applications, from which she has chosen one recipient so far. Depending on her budget she will add more properties and hopes to have them in the ground in the spring: Martin will design the projects, select the plants, handle the permits, and coordinate installation. Her first choice is a corner property, which will allow for more square footage of permeable surface and planting, she says; another reason is that it is visible from a nearby streetcar line, near a spot where she can install interpretive signage, and near a nursery she is working with to grow plants for sidewalk landscape projects.

While most of her projects involve working with city residents, Martin also works with businesses and nonprofits. The new sidewalk garden at Mission Pie at 25th and Mission—completed in August 2009—includes almond trees and other edibles that can be harvested for use by this nonprofit café. A nursery in the Bayview District, Flora Grubb, was ordered to repair 3,000 square feet of sidewalk when it renovated its building, so the owner contacted Martin for help. Martin removed 100 percent of the sidewalk and installed a low-maintenance sidewalk garden. The only concrete repoured was the walkway into the nursery and the driveways. This left 1,400 square feet of new permeable ground, which Martin planted with street trees. Here she used decomposed granite in the parking strip to allow customers to walk to and from their cars carrying plants, but the nursery owner later added plants.

In 2009, Martin took a leap from the sidewalk into the street to transform a "no-man's-land" in the middle of two streets that was being used for informal, illegal parking into a small park. This 9,000-square-foot project, known as "Hall's Horse Park" or "Guerrero Park," is part of the city's Pavement to Parks program, in which underused (and in many cases illegal and "unimproved") paved public spaces are reclaimed for citizens, all while slowing traffic and providing miniparks. Seizing an opportunity to expand on this minipark, Martin convinced 14 neighbors to tear up their sidewalks (removing 2,000 square feet of sidewalk) and add plants. Working on another shoestring budget, she convinced a local hospital to donate plants.

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Her own work was pro bono as well—and hands on. "I was directing the city workers placing the logs," she recalls. "I selected the logs and painted their ends to add color." While she was not allowed to remove the asphalt on this site, one suspects that its popularity may ultimately result in a more permanent—and permeable—park.

Martin hopes to expand her efforts to larger-scale projects—a current one under design will remove 30,000 square feet of pavement on Naples Street in another Pavement to Parks project. And she plans to tackle projects with "maximum watershed benefits"—peeling up pavement in hilly neighborhoods where rainwater can be intercepted before it begins to run off, for example. Yet it was her simple start on low-lying Shotwell, creating a garden for her own benefit that ended up having broader environmental and social benefits, that got things moving. In that project, she says, "the permit was the design. It made the process possible. I told [the city] that if they really wanted to be radical, they'd eliminate the permit." She did convince

them to greatly reduce the fee, from $800 to $215 per property (groups of neighbors applying together get an even steeper discount of $160). But, she says, the permit is needed to ensure public safety and "barely covers" the cost of two site visits by public works inspectors. And by using the permit, she points out, residents can plant what they want in their own neighborhoods rather than having to choose from the city's street tree palette, for example. She also points out that sidewalk landscaping can work in places where street trees may not. "San Francisco's a city of individuals; we value individuality. This way it's 'my money, I can do what I want.'"

What has driven all of these projects is Martin's unofficial role as "landscape architect." The reasons why it took an architect (rather than a landscape architect) to come up with the idea of converting San Francisco's excess pavement to permeable surface seem to be both a function of Martin's personality—exceedingly creative and determined—as well as of her Midwestern roots ("I was a "Cat kid," she says, referring to her father's work as an engineer for Caterpillar) and her mother's love of gardening. "I think it took someone from outside the city, from a rural, agricultural state. I come from the Midwest where the land is viewed as having clear potential and value. It's clear that something is going to be done with the land; it's what is done that is the question. Here in San Francisco we were parking on it, and covering it with concrete." Martin adds that she thinks about the function of land differently, having grown up aware of the value of fallow land in recycling nutrients. But seeing urbanized land sitting empty and unused—or worse yet, wasted on excess parking—didn't sit well with her. "These are the lessons I internalized growing up in a rural area," she says. "They are not necessarily what is taught in landscape architecture school." Martin denies that her work is simply gardening, however. "I call my business 'Shift Design Studio' to avoid being pigeonholed into just [designing] buildings. My work—even the 'just buildings' jobs—has always embraced a full spectrum of design. I often also design furniture, fixtures, and sculptural elements. I am a designer; I design. Some of my work even involves traffic design." She adds that while many landscape architects don't garden or grow their own food, she does both and feels that both activities influence her work.

Martin says local landscape architects are supportive, particularly since some of the projects she has initiated have resulted in work for them. "Prior to my involvement exactly zero landscape architects were involved in sidewalk landscaping—it wasn't even an option." The city asked landscape architects to review the sidewalk landscape guidelines, and each project is reviewed for compliance, says Martin. "So long as those guidelines are followed, anyone is allowed to do the design." Martin would love to sit for the landscape architect exam and become licensed, she says,

but she does not qualify based on the education and internship requirements.

More than her Midwestern roots—and her tendency to like to move earth—her sense of responsibility as a citizen and her love of design fuel her efforts, both to increase permeable surface and to streamline the process of doing so for city residents. "I don't know of many landscape architects who do policy work. Landscape designers are usually not involved when codes are written and land use planning is taking place. That's where this kind of change happens." In addition to getting the permit fee reduced, Martin also simplified the form itself from four pages to one, making it much easier for residents to navigate city bureaucracy. Explains Martin, "I care about the quality of the experience of public space in my town. I noticed that significant public resources were going into 'greening' by the city—without taking into account how that could be done for multiple benefits—stormwater, habitat, etc. This prompted me to start a dialogue about how the city could make smarter investments in infrastructure and how individual efforts could add up at the level of the neighborhood and watershed to make a significant impact."

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Martin bemoans the fact that San Francisco still does not have a comprehensive greening plan for public spaces. Yet, she says, there has been a sea change in the way the city thinks. "We've changed the concept of encroachment—using public space for private benefit—to private use of public space for public benefit." And her projects have had such a ripple effect that with or without a plan on paper, much of the city's gray is on its way to becoming green, a fact that has not gone unnoticed by city agencies. Says the Public Utilities Commission's Rosey Jencks, "Jane's projects have raised public awareness and support for our agency's increasing use of green infrastructure to capture, reuse, and treat San Francisco's stormwater runoff."

After Martin's Shotwell project went in the ground, the Bureau of Urban Forestry's Paul Sacamano said cautiously, "It's the beginning of something that could reduce flooding if it's implemented on a wider scale. It's important because it's the first of its kind; there may be others like it in the future." Just six years later, Martin's efforts have gone viral. The DPW recently created another half dozen street bulb outs and consulted Martin about how to best maximize the area that can be planted. But possibly the most telling sign of success is the 700-plus permit applications sitting on desks at the DPW, waiting for processing.

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