

THE GREEN MAN  
Blanc, on campus at the  
Drew School in February,  
standing around the  
corner from his newest  
garden.

DESIGN  
INTELLIGENCE



URBANSKAPING

## *OFF THE WALL*

**BY JOANNE FURIO**

PHOTOGRAPHS BY WINNI WINTERMEYER

INTERNATIONAL BOTANY SENSATION **PATRICK BLANC** SAW THAT MOTHER NATURE COULD GROW PLANTS ON ROCKS, AND SAID, "I CAN DO THAT." NOW, WITH HIS LARGEST AMERICAN PROJECT, HE IS TURNING THE WALL OF A BRODERICK STREET BUILDING INTO A MAJOR BAY AREA ATTRACTION AND—AS HIS RECENT THREE-DAY VISIT MADE CLEAR—INSPIRING VERTICAL-GARDENING MANIA WHEREVER HE GOES.













## WHAT GROWS UP

### CaixaForum Museum, Madrid

Blanc partnered with architects Herzog and de Meuron to create this verdant wall (above left and opposite) in 2006. So far, Blanc has done about 250 vertical gardens around the world.

### Musée du Quai Branly, Paris

In the middle of Paris, this shocking blast of foliage stays green even in winter, when all the trees on the streets are bare.

### Blanc's home office, Paris

The 29-year-old vertical garden that stands in the botanist's house was also Blanc's pioneering foray into the genre he's perfected.



## DAY 1: DREW SCHOOL, 2:06 P.M.

THE *BANG BANG* OF STAPLE GUNS ECHOES down Broderick Street as workers in hard hats attach plants to the felt-covered facade of Drew School's new \$15 million Sam Cuddeback Assembly Wing. A car pulls up to the opposite curb, and the anticipation becomes palpable. "He's crossing the street!" says Sam Cuddeback, the school's headmaster, sounding like a starstruck fan. The Green Man has arrived.

Green, as in the color of his long (if receding) hair, the carnations that adorn his collared shirt, and the vine pattern that twines across his sneakers. The 57-year-old even used to paint his fingernails green, but he stopped that about 10 years ago, and they are *au naturel* today.

Patrick Blanc, botanist and inventor of the vertical garden, with some 250 green walls to his credit around the world, is greeted like the global celebrity that he is. After a 14-hour flight from Paris, a handshake with Cuddeback, and a few greetings *en français*, Blanc is ready to view the progress of his largest vertical garden in the United States—and the first here that will contain only native species. Soon he is clad in a hard hat and standing at the base of the 40-foot-high building, which will house the school's new auditorium and performing arts center.

"It is good already," he says, his heavily accented English sounding relieved. In December, when Blanc viewed the selected plants via emailed photos, he worried that they would be too small to install. But they have filled out nicely. "The climate is very good here," he says. "It is warm in December—not like Paris!" ►



Minutes later, he is straddling the scaffolding three stories up, identifying the places that need more plants. “More galvezia!” one worker relays to another, as buckets transport plants from sidewalk to roof. By the end of Blanc’s inspection, about 400 more plants have been ordered to supplement the 4,150 already slated for the facade—minus two. Blanc plucks a *Galvezia speciosa* (“It has very beautiful flowers and blooms for a long time”) and an *Artemisia tridentata* (“impossible to get in Europe”) for himself. He’ll smuggle these souvenirs into France, as he often does with hard-to-find plants he likes. “Even if [customs officers] find them,” he says, “they do not always care.”

#### FOOD INC. TRATTORIA, 3:55 P.M.

OVER TWO BOTTLES OF CALIFORNIA white wine, Blanc reconnects with landscape architect Bonnie Fisher and her husband, the architect Boris Dramov, who designed Drew School’s new wing, which also features a living roof by Rana Creek. The pair are responsible for bringing Blanc into the project. Fisher and Dramov are partners in the renowned Roma Design Group, whose many urban projects, involving both landscape and architecture, include the Martin Luther King Jr. memorial in Washington, D.C., and the Union City BART station project, slated for completion next year. The couple, whose children graduated from Drew, contacted Blanc four years ago after seeing one of his most famous gardens, at the Musée du Quai Branly in Paris (his partner on that project was starchitect Jean Nouvel). “First I became interested because it was a school,” Blanc says of the Drew garden. “Then because they agreed to use only native plants of California. They made it more and more appealing. So here I am.”

Not surprisingly, the high school has the reputation of being a progressive parent’s dream, thanks largely to Cuddeback, who has been at the helm for 20 years. Fashion designer Alexander Wang and writer Anne Lamott are among the alumni; the heavy-hitter board includes James Hormel Jr., of the food giant, and real estate attorney Mary Murphy. Cissie Swig, of the San Francisco real estate and hotel dynasty, has grandchildren at Drew, and Gap CEO Glenn Murphy is also a school parent.

Though the Cuddeback Wing’s vertical garden has expanded Drew’s place on the map, literally and figuratively, like most projects of this scale it has had its share of

## THE UPS AND DOWNS OF THE VERTICAL GARDEN

### HOW IT’S BUILT

1. A metal frame is attached to the wall and hangs about 4 inches away from the building surface.
2. A PVC sheet is then riveted to the metal frame. This layer brings rigidity to the whole structure.
3. A layer of two-ply felt polyamide is stapled onto the PVC. This felt, which is made in the South of France to Blanc’s specifications, is rotproof and allows for uniform water distribution. Workers slide the roots of the plants between layers and staple around each plant to secure it. The roots eventually grow through the felt.

### HOW IT’S WATERED

Water is provided to the roots automatically four to five times a day through an irrigation system running horizontally along the facade. The water is distributed along the felt to all the roots of the plants. Since there is no soil, the water must be supplemented with a low concentration of nutrients.







## PLANTING DAY

February 7, 2011, marked the first day of planting at Drew School. Seedlings were brought up to the top of the wall and planted from top to bottom.

## HOW IT HELPS

Drew School's vertical garden uses some 550 gallons of water a day—in some cases more than a horizontal garden of the same size. But there are also numerous ecological benefits.

**Reduced greenhouse gases** The plants help pull carbon from the atmosphere. More than 30 percent of the building surface—the 4,350 square feet of the vertical garden and the roof combined—will be green. That's double the size of the parcel of land that the project is built on, creating 100 percent more landscape cover than existed on this site before it was originally developed, in the early 1800s.

**Healthier air** The plants also increase air moisture through evapotranspiration. This and the plants' absorption of carbon have beneficial effects on the local microclimate.

**Less heat** Since much of the building's surface is wrapped in plant materials, the vertical garden reduces the "heat island effect" caused by paving in urban areas.

**Runoff control** The garden acts as a sponge, slowing storm-water runoff.

**Energy efficiency** The space between the planted wall and the building provides natural insulation and soundproofing. Thanks to the vertical garden and living roof, energy use for heating and cooling will be less than for structures made from traditional building materials.

controversy. The Pacific Heights Residents Association protested the demolition of the Victorian building that previously occupied the site. To make the new addition fit into the neighborhood, the architects turned the single facade in the original design into two smaller masses with additional windows. The garden facade cost \$125,000, about 15 percent more than the materials used on the other walls, but board members weren't put off by the expense, reasoning that the garden reflected the school's core values.

Blanc's concept of vertical gardening is spreading like kudzu, as urban planners, architects, and landscape designers grapple with new ways to green the world's increasingly built-up cities. "Before Patrick, there was not a lot you could do, except for street trees," says Fisher. "The innovative way he has created a diverse, complex, arresting urban landscape can change the face of cities around the world." San Francisco planning commissioner Kathrin Moore, an architect by training, says, "Buildings are getting taller and cities are getting denser. But how do we still have a quality of life? This helps set the standard."

The Bay Area is already known for the groundbreaking living roof of the California Academy of Sciences (CAS), which garnered international attention when it opened three years ago. And Design Within Reach's spring catalog includes Wally Pockets, the felted-plastic gardening system devised to grow wall gardens at home. Native plants, meanwhile, are the rage in local gardening circles, but taking them from horizontal landscapes onto a wall has never been done—and there's some skepticism about whether it can be. Frank Almeda, the botanist responsible for planting the CAS roof, wonders how well the Drew wall will anchor the roots of woodier species or accommodate the species that like a dry season. "It is risky," says Richard G. Turner Jr., editor of *Pacific Horticulture*, "but almost any garden is, on some level. Many of these plants have never been tested in situations like this. That's the most exciting part. It opens up a whole realm."

## DAY 2: CALIFORNIA ACADEMY OF SCIENCES, 5 P.M.

A quartet of eager CAS plant experts, including Alan Good, a horticulturist in the landscape exhibits department, is taking Blanc on an after-hours tour of the roof and the rain forest garden. Good contacted







**“Renzo Piano wanted this?” Blanc asks, incredulously. “It’s not very nice,” he observes, unmoved by the staff’s explanation.**

Drew to volunteer his services immediately after learning of Blanc’s involvement, and Drew’s board formed Friends of the Drew School Vertical Garden to facilitate community involvement. CAS may also help to monitor the progress of its green roof and wall.

On the CAS roof, Blanc is taken aback by the rows of caged black stones, or gabions, that divide up the otherwise verdant space. “Renzo Piano *wanted* this?” he asks, incredulously. “It is not very nice,” he adds, after taking a few shots with his camera. The staff explain that the gabions are used as access paths for plants, excess drainage, and, on slopes, anchors for both soil and plants. Blanc is unmoved. What strike him are the sloping design and the 70 to 80 indigenous species, and throughout the tour he rattles off their names, impressing the CAS crew. “‘Encyclopedic’ sounds like a cliché,” Good says, “but he seems to know everything about California native plants.”

Blanc considers himself “first of all a botanist,” and he still works with the French National Center for Scientific Research, though casual observers might mistake him for an eccentric artist, as Fisher did at first. He’s not afraid to contradict or even correct his peers. At a tank called “Freshwater Fishes of Borneo,” he taps his long-nailed forefinger on the glass, indicating the underwater plants that don’t fit in, saying, “Sri Lanka, Sri Lanka, and Vietnam. Only one from Borneo.”

After silently viewing several vertical gardens created by the staff, he finally praises one on the top floor. “This is much

better,” he says. “It is more established. You have mosses, you have everything. This plant”—he points out a bertolonia—“is not easy to grow. And it’s very successful.”

#### THE FORUM AT THE CALIFORNIA ACADEMY OF SCIENCES, 7 P.M.

DURING HIS FIRST WHIRLWIND VISIT TO the Bay Area, in 2009, Blanc drew a standing-room-only crowd at SoMa’s San Francisco Planning and Urban Research Association (SPUR). That trip also included some stops at wholesale nurseries as far south as Castroville—where Blanc would often run excitedly to Fisher upon discovering particularly intriguing native plants. Nursery owners awaited his arrival as anxiously as if he were visiting royalty, and one was upset when Blanc’s schedule at first would not allow him to stop by. “After he was here, people called and said, ‘I heard he was in town; why didn’t you call me?’” says Fisher. Vertical garden mania continued into 2010, with a sold-out talk at the Sutter Street gallery of the American Institute of Architects’ San Francisco chapter in February and a DIY workshop at Flora Grubb’s Bay View nursery in March. Grubb, a Blanc acolyte, creates vertical gardens for clients and also sells systems for making them.

Keeping all that in mind, Fisher has arranged an extra appearance for Blanc at CAS, in the second-floor auditorium, to accommodate his local fans. Among the sold-out seats, occupied by nearly 300 mostly architectural and horticultural types who paid \$12 each to hear Blanc speak, is Mickey Mangan, of Habitat Horticulture in San Jose, a firm that designs and installs wall gardens in the Bay Area. Mangan says he’s here to see “the guru.” Also in attendance is a contingent from Piedmont, researching a possible Patrick Blanc vertical garden for their proposed Moraga Canyon Sports Field.

Blanc illustrates his talk at the Forum with large-scale visuals, including images from his book *The Vertical Garden: From Nature to the City* (W.W. Norton, 2008). He talks about how he began making aquariums as a boy, but had his epiphany while visiting Thailand and Malaysia at the age of 19. “I saw that plants were growing without soil on the trunks of trees, on rocks,” he explains. He realized then that plants don’t necessarily need soil to grow—they can grow on stone. And what is a wall if not a man-made rock face? “Concrete is simply a







#### HAND SKETCHED

Blanc scribbles out the design for each garden by hand, organizing the plants by name, in a pattern meant to mimic nature.



#### NATIVES ONLY

About 64 of the 105 species—all California natives—that cover the wall are from the San Francisco Bay Area.

#### LOCALLY GROWN

Many of the plants were grown from seed at Rana Creek, a wholesale nursery in Carmel Valley.

#### SPECIES DIVERSITY

This wall may have the greatest variety for its size of any native garden in the region, with some 100 species covering a 1,720-square-foot area.







# A student asks Blanc where else the city could use the greening power of a vertical garden. He suggests, “Downtown, where the buildings are not very interesting.”

limestone cliff. Concrete is not artificial. It can be totally used to reintroduce something natural,” Blanc says.

Blanc created his first public vertical garden in 1986, at the Museum of Science and Technology in Paris, but in those days “nobody was interested” in the concept, he says. By 1994, when he presented his next major garden, at the Chaumont-sur-Loire garden festival, “suddenly everybody was interested.” His Musée du Quai Branly creation, installed in 2004, was an international success: “Since that project, everybody in the world now wants to make vertical gardens. People didn’t know it was one of so many I have done before.” What Blanc leaves out of his biography is that he holds a kind of super PhD in science that has no counterpart in the American academy, requiring an additional 10 years of research and an additional thesis. He does reveal, however, that during one of his many forays into the rain forests of the world—this forest was in the Philippines—he discovered a new species of begonia, which is being named after him.

Blanc’s gardens can now be found in many places and in many forms, from the indoor vertical plantings at the French Embassy in New Delhi to shopping centers in Bangkok to gardens for the luxury brands Marithé and François Girbaud and Cartier. The garden at the CaixaForum Museum in Madrid, adjacent to the building (by Herzog and de Meuron, the architects who designed the de Young), is considered one of his most stunning works. This garden, planted in 2006, is more graphic than his other, more naturalistic, designs, and the pattern formed by the plants is more obvious. In response to charges that he only designs for the wealthy, Blanc says he also adds greenery to “the worst places you can imagine,” including Parisian parking garages, the facade of an Aix-en-Provence motorway bridge, and the exterior of a McDonald’s in Bangkok.

When he finishes speaking, the audience peppers him with questions that betray concern, if not skepticism: How do you maintain a vertical garden? What about replacing plants? Have any of his gardens failed? Most vertical gardens, including the one at Drew, need maintenance work up to three times a year, he says, depending on conditions. Drew’s garden, because of its height, will require the help of a cherry picker.

As to the success of his gardens, Blanc points out that his first, the one at his house, which occupies an entire wall of his office, is 29 years old: “I have never replaced a garden, never. If you put the right plants in the right places, they will grow with very little effort. It is important for you to learn, of course, about the biology of the plants, the habits of the plants, especially about the right level. Once you know all those things, the plants can grow for a long time.” Even empty spaces, he says, are not to be feared; they naturally fill in with algae and mosses. These gardens shift and change as things move in and out, just as gardens do on the ground.

## DAY 3: CENTRAL SEVENTH-DAY ADVENTIST CHURCH HALL, 1:30 P.M.

DREW SCHOOL’S ENTIRE STUDENT BODY and faculty are packed into the whitewashed church hall down the street. Teachers who couldn’t find seats among the folding chairs are sitting on desks arranged along the periphery—or standing. The church has been serving as Drew’s auditorium, and this may well be one of the

## FAST GROWTH

Two weeks after the plants have been inserted roots-down into the felt, they are already beginning to sprout. Some will grow up, some will spread like a carpet, and some will grow out.







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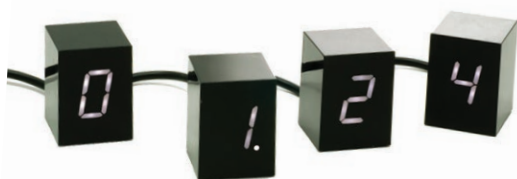
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### OFF THE WALL

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last times the school uses it, for the new performance wing is scheduled to open this month.

Here, Blanc delivers the same presentation he gave at the Forum, varied slightly to connect with his teenage audience. "When I was young, I had this dream," he says. "Forty years later, I got to realize my dream." He shows a photo of his office, where his original vertical garden is visible behind his desk. Underneath the desk is a glass floor covering an aquarium filled with tropical fish. The photo inspires oohs, aahs, and chatter from the audience.

During the Q&A, one student asks if there is a place in the city that could use the greening power of a vertical garden. Blanc suggests "downtown, where the buildings are not very interesting" and "old places all along the piers."

After acknowledging thunderous applause, Blanc leaves the church and swings by Broderick Street to look at his wall. There he runs into a 17-year-old Drew senior, who chats with Blanc as they watch the garden being installed. The student, who thinks it would be "really cool" to combine plants with an aquarium, as Blanc did in his office, says he's interested in making a vertical garden himself: "I wish I had done it as my senior project."

### ROMA DESIGN, NORTH BEACH, 7:30 P.M.

TO THE STRAINS OF A JAZZ DUO, BOARD MEMBERS mingle with parents and the horticultural groupies who have been following Blanc during his visit. Blanc, a glass of white wine in hand, circulates through the crowd, his deep baritone audible below the buzz, on its own melody line. The room grows quiet when Cuddeback takes the microphone and begins a series of shout-outs to board members and Michela Alioto-Pier, who supported the Drew expansion when she was supervisor for District 2 and who is now running for mayor. Cuddeback, describing the new garden, refers to Blanc as a genius, and Blanc responds as if someone just hit him on the head. When he gets the floor, he corrects Cuddeback: "The only genius thing is the plants." ■

JOANNE FURIO IS A SAN FRANCISCO CONTRIBUTING WRITER.

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