http://www.inexhibit.com/case-studies/patrick-blanc-vertical-gardens/
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Patrick Blanc – vertical gardens

Blanc in his office; in background, a 30-year-old vertical garden

The vertical gardens of Patrick Blanc

Introduction

In 2005, with the completion of the new **Musée du Quay Branly** in Paris, terms such as "vertical garden" and "living wall", until then a matter for botanists and landscape designers, became suddenly popular among the general public. The cause was indubitably the museum's stunning planted facade designed by French botanist *Patrick Blanc*.

Patrick Blanc (born 1953, Paris) is widely regarded as a great artist, a designer, and the inventor of modern green wall; yet, I suspect he actually considers himself above all a scientist, a researcher, and a nature's investigator.
Blanc, after graduating and taking a PhD in Natural Sciences in 1979, begun working at the *Centre National de la Recherche Scientifique* as a scientist specialized in tropical plants, and making scientific expeditions as all respectable scientists do. His encyclopedic knowledge of

plants is proverbial and, in 2011, Blanc discovered in the Philippines a new species of Begonia, the *Begonia Blancii*.

A 12-year-old Patrick Blanc in a tropical greenhouse in Lisbon, 1965; photo courtesy of Patrick Blanc

Nevertheless, his name is commonly associated to the design of **vertical gardens** – also known as green walls, living walls, and walls of living plants – as a pioneer and one of the most inventive professionals in this particular field of landscape design.

Blanc's vertical garden system

Blanc invented his personal version of the vertical garden when he was still a teenager, with the aim to provide a biological water filtering system for his beloved aquariums. In 1988, he eventually patented an improved version of that early project.

His first major project of a vertical garden was completed in 1986 at the **Cité des Sciences et de l'Industrie** in Paris, but his idea did not arise much interest until 1994, when it started becoming an hot topic among gardening professionals; yet it was not until 2004 that it spread beyond specialists to reach a wider audience.

The original idea of Blanc was *"to have nature coming back in towns"* and to do so he took inspiration from both tropical rainforests and high mountain environments, where many plants grow without or with a minimal amount of soil.

Installation at the Cité des Sciences et de l'Industrie, Paris, 1988; image courtesy of Patrick Blanc

Blanc's Green wall for the Aquarium of Genoa by Renzo Piano, 1998

His plant wall system, which can be used both indoor and outdoor, is composed of a **metal frame**, fastened to the walls or self standing; a **PVC layer** 10mm thick, which provide stiffness and waterproofing; a thin **polyamide felt**, which conveys water to the plant roots by capillarity and on which the roots grow; and an **array of plants**, either climbing or not, which are installed into the felt both as seeds or already grown.

Water, either tap or recycled, is provided from the top by a watering system which constitutes an essential part of the green wall yet it is simple as a plastic hose, with small holes 2mm across every 10 cm, coupled with an irrigation timer.
For Blanc, a vertical garden makes a better use of water than a traditional, horizontal, one because there is less percolation in the soil and, consequently, there is a larger percentage of water available for the vegetation.

Vertical gardens made this way are not much more expensive (about 15% on average) than a traditional facade system and provide both thermal insulation in winter and natural cooling in summer; nevertheless their maintenance costs are rather high, since they typically need maintenance works three times a year and some components, such as felt mats, should be periodically replaced, especially when installed outdoors.

Projects

I present here **five projects** by Blanc, four installations for museums in three different continents and a work created in 2013 on the occasion of the Paris Design Week, all exemplary for their ingeniousness, design skills, and creative relationship with architecture and urban fabric.

21st Century Museum of Contemporary Art, Kanazawa – Green Bridge installation (2004-2012)

(Architect: SANAA – Kazuyo Sejima and Ryue Nishizawa)
In 2004 the newly opened 21st Century Museum of Contemporary Art in Kanazawa, Japan, commissioned Blanc a large-size installation to be included in the museum's permanent collection.
The 40-foot-long work, entitled ***Green Bridge***, encloses a glass corridor with a thin wall which supports a lush ensemble of plants from about 100 species, including snow flowers, irises, lilies, hydrangeas, bush clovers, and sunflowers.
Species and arrangement were conceived to make the plant mix blossom and flourish differently in the four seasons, a concept typical of Japanese gardens.
Furthermore, vegetation is different on opposite sides of the installation, which are characterized by different climatic conditions and levels of insolation.

Green Bridge permanent installation at the Kanazawa museum; Photos NAKAMICHI Atsushi /

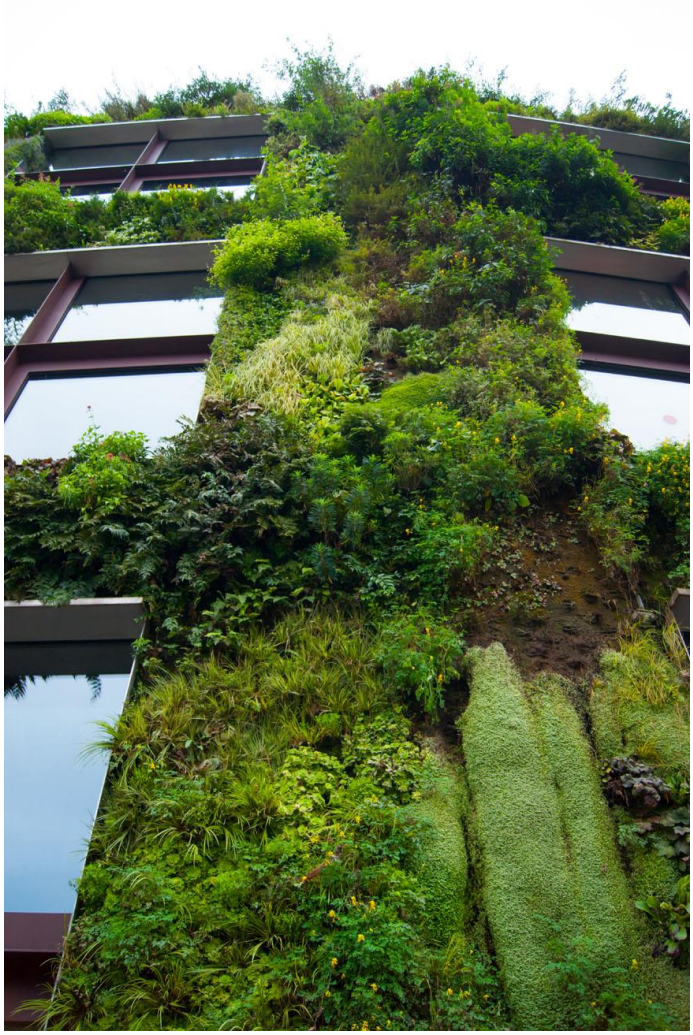
Nacása & Partner

Green Bridge installation; blue and white striped "Ipomoea nil"

Musée du Quai Branly – Paris – living facade (2005)

(Architect: Jean Nouvel)
As anticipated, the green facade of the **Quai Branly museum** was the work that catapulted Blanc to fame.
Designed by French architect Jean Nouvel, the museum incorporates an outstanding array of green installations including a 190,000 square-foot garden designed by Gilles Clément and Blanc's living walls, of which the large green facade of the museum is certainly the most iconic.
Encompassing an area of 8,600 square feet, the green facade exploits the intrinsic flexibility of Blanc's *Mur Vegétal* system to fit the architecture like a foot in a shoe.
The living wall accommodates some 150,000 plants of 150 different species – mostly from Europe, North America, China, Japan, Chile, and South Africa – to achieve a high level of biodiversity. Blanc avoided using tropical plants, which are unsuitable for a north-facing facade in Paris' climate.
A series of smaller living walls were also installed in the museum's offices.

Living facade of the Quai Branly Museum; photos courtesy Patrick Blanc



Living facade of the Quai Branly Museum; details; photos by Inexhibit

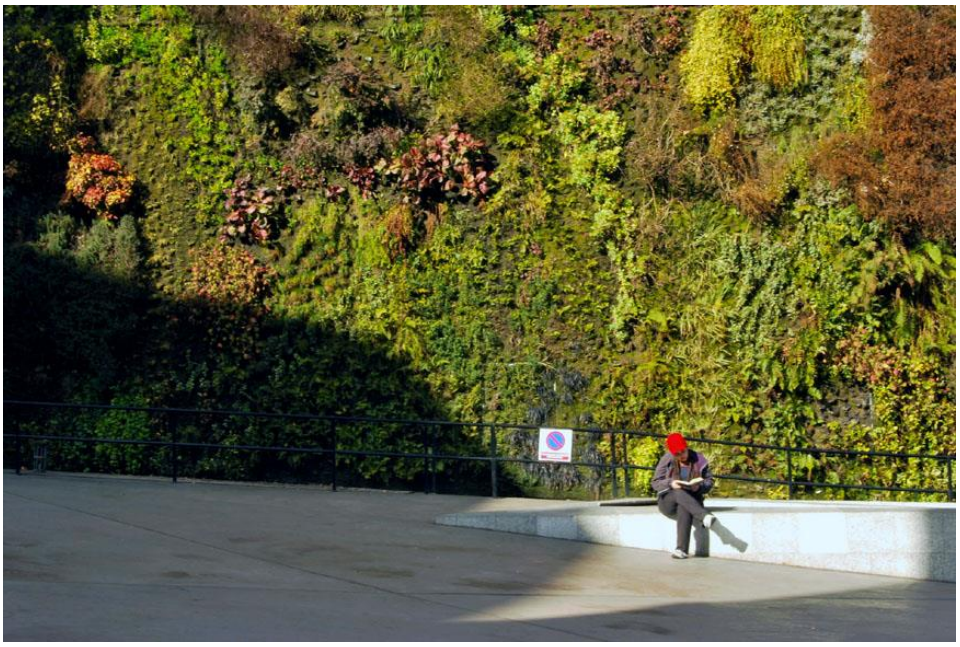
One of the living walls installed in the museum's offices

CaixaForum Madrid – vertical garden (2008)

(Architect: Herzog & de Meuron)
The green wall of the Caixaforum is probably the second most famous project by Blanc. Filled with some 15,000 plants from 250 species, the 6,500 square-foot vertical garden was conceived to provide physical and spiritual relief in the hot summer climate of Madrid.

Therefore, plants were selected to adapt to the peculiar climatic conditions of the city, located 670 meters above the sea level.
Species installed in the living wall include, among others, *Arenaria montana, Bergenia cordifolia, Campanula takesimana, Cedrus deodara, Cerastium tomentosum, Cistus purpureus, Cornus sanguinea, Dianthus deltoids, Garrya elliptica, Kerria japonica, Lonicera nitida, Lonicera pileata, Pilosella aurantiaca, Sedum alpestre, Taxus baccata, Yucca filamentosa*, and different Begonias, Fuchsias, Geraniums, Hydrangeas, and Mahonias.

Caixaforum Madrid vertical garden, photos courtesy of Patrick Blanc



Caixaforum Madrid vertical garden, details; photos by LRTRRG, Tamara Polajnar, and Alberto Romero

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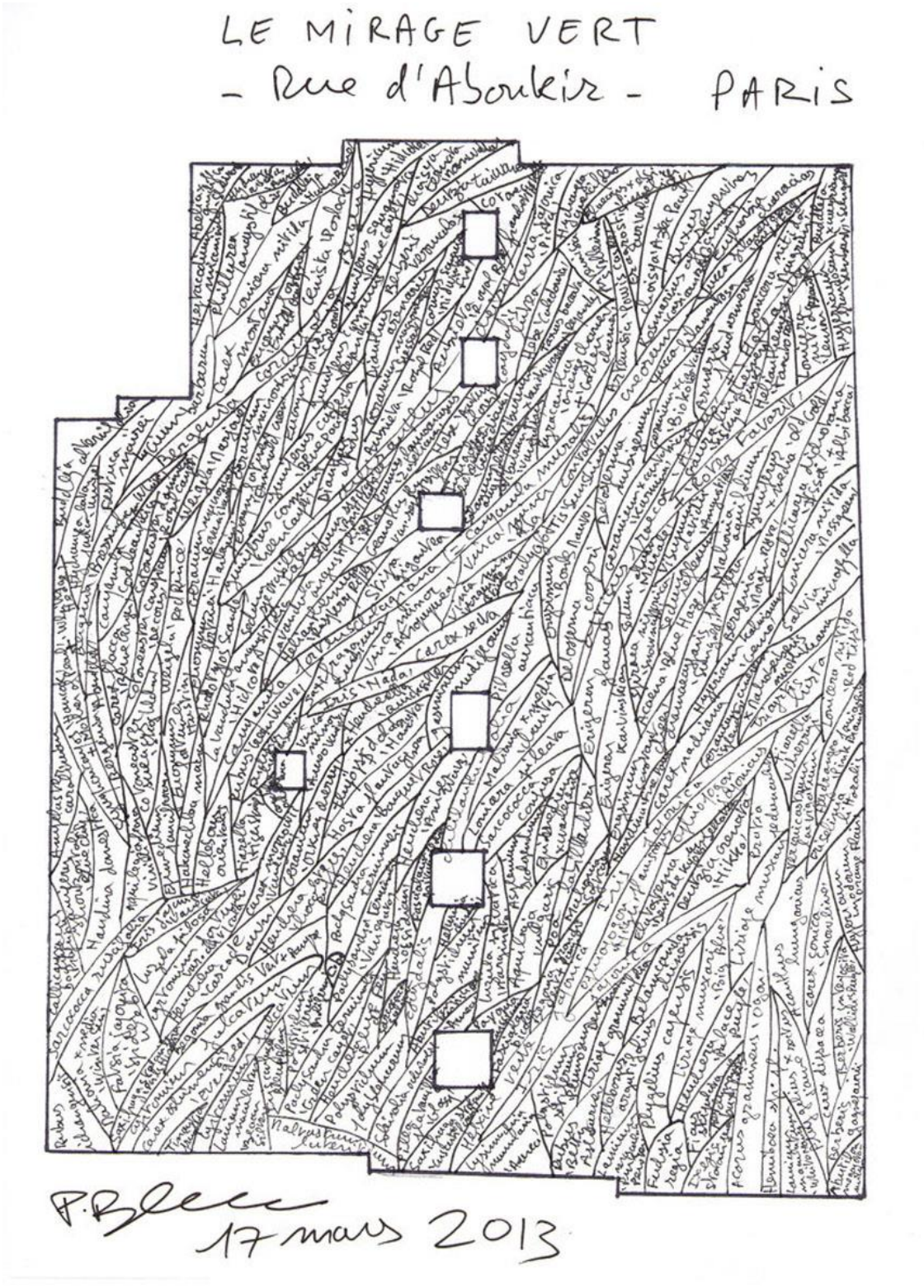
L'Oasis d'Aboukir – Paris – vertical garden (2013)

(Originally made for Paris Design Week 2013)
Blanc made this installation to transform an ordinary building facade in Paris' second

arrondissement into a flamboyant green space. It was a demonstration of his belief that nature could dramatically improve the quality of the urban space.
The installation **L'Oasis d'Aboukir** (the name originates from the *Rue d'Aboukir* where the work is installed) makes use of 237 plant species arranged in a diagonal pattern to create a sense of dynamism and movement. This project perfectly illustrates the conceptual development of Blanc's works; from a preliminary geometric framework (yet with all species thoroughly identified) to a puzzle-like tessellated pattern where every plant is carefully positioned in its specific tile.

The Oasis of Aboukir, views after and before the installation completion, photos by Yann Monel, courtesy of Patrick Blanc

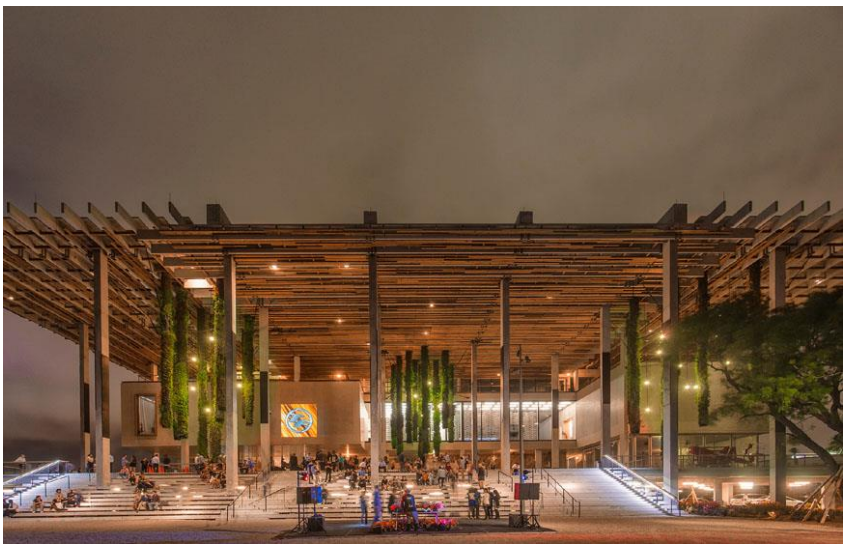


The Oasis of Aboukir, development drawings

The Oasis of Aboukir; photo by Yann Monel

PAMM Pérez Art Museum – Miami – vertical garden (2013)

(Architect: Herzog & de Meuron)
For the Pérez Art Museum, Blanc was required by the architects to conceive **three-dimensional vertical gardens** rather than bi-dimensional ones.
The solution was to create an array of "columns", either hung or self-supporting composed of steel tubes wrapped with a felt layer studded with hundreds of small pockets.
The plants, as usual, grow on the felt layer but Blanc had to carefully select them since one half of the column is exposed to sunlight, strong winds, and salt spray, while the other is always on shade, hence he installed different species (80 in total) on the outer and the inner sides, making use of both tropical and local plants.
Watering is provided by the large rainwater-collecting flat roof of the building.



PAMM Pérez Art Museum Miami, photo by Armando Coll

PAMM Pérez Art Museum Miami; photo by Knight Foundation

PAMM Pérez Art Museum Miami; photo © Iwan Baan, courtesy of Herzog & de Meuron

PAMM Pérez Art Museum Miami; model of the installation, photo courtesy Patrick Blanc

PAMM Pérez Art Museum Miami; east facade, rendering

PAMM Pérez Art Museum Miami; the living columns before and after plant installation, photos courtesy Patrick Blanc

PAMM Pérez Art Museum Miami; photo by World Red Eye

Text by Riccardo Bianchini