

## **The Cultivated Facade**

### **Greenery on buildings is gaining traction, but needs validation.**

Facades are a building's most visible element, and adding plants offers entirely new dimensions of texture, symbolism, and seasonal dynamism. As French botanist and green-wall pioneer Patrick Blanc has said, "A simple wall can become something poetic." Of course, poems can be tragic, and the risk of failure that comes with vegetating facades has tempered many architects' enthusiasm. To put it bluntly, green walls can die.

Katia Perini, an instructor at the University of Genoa's architecture school and an expert in green walls, says the perception of risk has slowed their acceptance. "As architects, we're not used to having to relate to a growing material. If you use concrete or steel, you know how it will work. In the case of vegetation, everything can change," says Perini.

A steady uptick in green-wall installations shows that architects are getting past anxiety. Researchers, green-wall providers, and architects say the mainstreaming of planted roofs, marked growth in interior green walls, and accumulated insight from exterior projects to date are all engendering greater comfort with planted facades.

They also see rising awareness of green-wall benefits—from sound and thermal insulation and provision of habitat for bugs and birds to cleaner air and the generalized sense of wellbeing known as biophilia. "The combination of all these benefits is starting to get traction. Green walls are now something that people are taking seriously," says Gary Grant, a principal with London-based Green Infrastructure Consultancy.

It still takes "the right developer" to push forward a project, says Grant, because green walls are not cheap. But he sees a clear trend toward integration of green walls and says the excitement they offer justifies the expense. "When people want something, they find the money."

### **Two Faces of the Green Wall**

Engineered green walls take two forms. One type, which academics like Perini refer to as "green facades," grows climbing vines and ivy on cables or scaffolds, forming a living screen over a built facade. While plants have crawled up walls for millenia, the modern green facade took shape in Berlin in the 1980s and 1990s, where eco-minded incentives spurred the installation of more than 2.5 million square feet of them.

The other green walls—living walls—are dense vertical gardens whose plants seem to burst out of a building's skin. These consist of preplanted panels or modules affixed to a structural wall or frame, the first of which were developed by Blanc in the 1990s. They gained global fame in 2005 with his 8,600-square-foot installation at Ateliers Jean Nouvel's Musée du quai Branly in Paris. Blanc's plants grow hydroponically within a water-soaked mesh fabric, while competing systems employ lightweight soils (akin to the growth media developed for green

roofs) in fabric pockets or trays. All require continuous irrigation and infusions of nutrients and fertilizer.

Living walls' verdant and varied plantings offer a far more diverse pallet of textures and colors. This design power and biodiversity can be expensive, however. Living walls can reach \$125 per square foot, according to Perini. That is three to 10 times the cost of green facades, and she says living walls also require more maintenance.

Grant and other green-wall designers say both types are improving as their creators learn what plants thrive under which conditions. The designers say they are also educating clients better, steering them away from projects facing higher risks of horticulture failure, and preparing them for natural variation.

As Grant puts it, green walls will not always be green. Plants on a southern exposure in London, for example, will die back under summer heat. "They may not look their best all the time. It's about managing expectations," says Grant.