

# Healthy Mergers



Across the globe, the number of major projects melding built forms with natural elements is growing every year. Besides the ecological benefits, landscape architect Tim Waterman writes, the trend's most exciting aspect is the degree to which architects and landscape architects must co-operate. His advice for colleagues: Get set to break out of your silos

Pictured from above, Singapore's multi-tower Marina One complex steps up from a naturally ventilated courtyard referred to as its Green Heart. The design is an ultra-modern take on the ziggurat hanging garden. Photo by H.G. Esch

**O**n a visit recently to the new Musée de la Romanité in Nîmes, France, I was surprised to find a roof garden with expansive views of the city and the ancient Roman arena next door. I had read about the museum – conceived by architect Elizabeth de Portzamparc and landscape architect Régis Guignard – but I somehow hadn't registered that the building incorporated a green roof. Just a decade or so ago, the headlines about such a building would have crowed about its green credentials. These days, however, a green roof seems to be an expectation, no longer worthy of mention, at least not much of one.

No news is good news. If green roofs and living walls are business as usual, it means that fruitful collaborations between architects and landscape architects are becoming everyday occurrences. "Nowadays, in several European countries, the skylines of cities are no longer perceived as grey lines, but as green lines," says Dimitra Theochari, who is both a landscape architect and an architect in the German office of Ramboll Studio Dreiseitl, an interdisciplinary practice that adopts a holistic approach to siting buildings. The upshot? It now takes heroic feats to get a green-clad building noticed – a challenge that architects worldwide seem more than keen to take up.

The most iconic example of green building is, of course, Stefano Boeri's Bosco Verticale in Milan, as startling in reality as it is in photographs. The landscape design for the project, by Emanuela Borio and Laura Gatti, is important not just for its arresting look; it has also advanced the horticultural technology available for vegetated buildings because the concept asks so much of the plants.

How exactly does a tower function as a plant habitat? For greenery, it's akin to being on the face or top of a cliff. The exposure to wind and sun and the sparseness of available soil and water are directly analogous. There's a reason you don't find many plants – particularly large ones – atop cliffs, however. To sustain its greenery, Bosco Verticale requires an advanced irrigation system, and the plants at the higher levels have their roots wired into the buildings' fabric to prevent them from being blown away. The unlikeliness of lush plantings in such a setting is part of the building's visual appeal. And the technology is expensive, which accounts for another aspect of the appeal: the luxury of it all.

While a great deal of enthusiastic green ink has been expended on the Milan landmark, the fact remains that such buildings are largely possible only for high-end clients. A visit to the site also raises other questions. Those plants on their private balconies are said to scrub the air, but the complex sits above underground parking for the residents' polluting Maseratis. The towers also throw a nearby public park into deep shade and meet the ground with hostile mirrored-glass walls. By comparison, the working-class block next door – as yet ungentrified – is cooled by much less costly yet equally effective technology: thick masonry walls and a convivial courtyard.

Still, Bosco Verticale has unquestionably spurred a burgeoning interest in and understanding of landscape among architects, which is allowing conversations to move beyond mere discussions of how to distribute the parsley around the pig. Technologies that make good connections between landscape processes and building systems are being developed and perfected. From "living machines" that integrate landscape systems into building interiors for purposes such as sewage treatment to ground-source heat pumps requiring the extension of building systems into landscapes, a sophisticated interdependence is evolving.

At the University of Greenwich in London, where I teach landscape architecture, a building designed for our faculty by Irish architects Heneghan Peng and British landscape architects Allen Scott (with significant input from the department), includes extensive green roofs that incorporate ponds, experimental agriculture, an algae bioreactor, hydroponics and aquaculture. The department takes great pride in an openness between landscape and architecture, with the building serving as an emblem of this unity. As with Bosco Verticale, the symbolism of the green-fringed building is uniquely powerful, making a statement about its uses and users.

One example in which function and symbolism are especially well

## ***A green roof used to make headlines. Now it's an expectation***

PHOTO BY NAMETKO (OPPOSITE)



Elizabeth de Portzamparc's Musée de la Romanité in France has been lauded for its diaphanous facade, but its sensitive landscape elements are perhaps of greater note.



LEFT AND BELOW: High above the streets of Seoul, the open-air alcoves cut into David Chipperfield's 30-storey headquarters for a leading beauty company shelter verdant copses.

***The symbolism  
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LEFT: Extending radially from a central atrium into five distinct blocks, the design for the Czech Forestry Service's flagship emphasizes a symbiosis between the building and the surrounding woods.



LEFT: Ringed by catwalks and covered terraces, Marina One's 37,000-square-metre Green Heart features nearly 400 plant varieties and as many as 700 trees. Its self-sustaining microclimate provides relief from Singapore's steamy heat.

PHOTO BY DALE TAN/HIGH RISE PHOTO

married is the design for a tree-masted government building in the Czech city of Hradec Králové. The project, a collaboration by CHKAU, K4, Ivo Stolek, Jan Stolek, Tomas Babka and breathe.earth.collective, involves a seamless interpenetration of forest and building, which is appropriate given the client: The facility serves as the flagship for the Czech Forestry Service.

Such projects aren't limited to Europe. In Seoul, David Chipperfield's 30-storey headquarters for Amorepacific, South Korea's biggest beauty company, incorporates leafy copse into open atria high above the street. In Singapore, a recent project by Ingenhoven Architects and Gustafson Porter + Bowman – the lush mixed-use Marina One complex – is equally ambitious, offering an ultra-contemporary take on the ziggurat hanging garden. Featuring curvilinear terraces stepping up from a naturally ventilated central courtyard, Marina One serves as a haven in Singapore's steamy climate and is a suitable addition to a city that already boasts another great landscape/architecture collaboration, Gardens by the Bay.

In North America, meanwhile, two of the most important green building projects of recent years are the Bullitt Center in Seattle (completed in 2014 by Berger Partnership and Miller Hull Partnership) and the Center for Sustainable Landscapes in Pittsburgh (a 2013 project by Andropogon and the Design Alliance Architects). Each of these buildings incorporates rain gardens, greywater systems and a range of advanced green technologies. In the future, the level of green tech incorporated into the Bullitt Center and the Center for Sustainable Landscapes should be standard for every new building. Ecological arguments will likely make this change imperative, but the really interesting problems posed by such projects – plus the chance to discover new forms of work outside our traditional roles (and

comfort zones) – are already proving attractive to architects and landscape architects alike.

In terms of green roofs alone, says Theochari, "there are so many examples ... of uses for people, typologies of landscape, ecological effect, their role in the water cycle. Roofs can store water, can increase evaporation or evapotranspiration, can provide key habitat areas and can create healthy patches for the growth of pollinators, the decline of which is one of the biggest ecological threats of our time."

Not long ago, Theochari's studio helped develop an award-winning stormwater-management strategy for Denmark's capital. Called the Copenhagen Cloudburst Formula, it provides an integrated framework for regulating stormwater in the city and is notable for how well it visually communicates an otherwise complex process. The latter feature is especially valuable for fostering an understanding of such systems among local authorities, national policymakers and, perhaps most important, the area's population. It's also a reminder that retrofitting cities and buildings will be as important to the future health of cities as creating whole new landscapes.

Back at the Musée de la Romanité in Nîmes, where the city's Roman history is evoked in a diaphanous facade that de Portzamparc says was inspired by a toga's drapery, it isn't – to me at least – the drama or elegance of the building that makes the biggest impression. As striking as the high-concept exterior is, it's the rich interaction of building and landscape – de Portzamparc's work with Régis Guignard, on the green roof and other links to the museum's surroundings – that seems more meaningful. Even if it doesn't make headlines. **AZ**