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# The age of flower towers

By Christopher Woodward

Architects are tackling the problems of the concrete jungle with ambitious schemes using green technology to grow forests in the sky



The 27-storey Bosco Verticale in Milan, designed by Stefano Boeri as the world's first 'vertical forest'

**T**he most exciting new tower in the world is under construction in Milan. At 27 storeys high, Bosco Verticale is a splinter beside the Shard, the 87-storey skyscraper under construction in London. What sets the Milan tower apart is that it will be the world's first vertical forest, with each apartment having a balcony planted with trees. In summer, oaks and amelanchiers will shade the windows and filter the city's dust; in winter, sunlight will shine through the bare branches.

Bosco Verticale is the vision of Stefano Boeri, architect, academic and former editor of design and architecture magazine *Domus*: he begins his presentation with Ovid's fantasy of the nymph Daphne being turned into a tree. But, he adds, such a metamorphosis adds only 5 per cent to construction costs. And, he argues, it is a necessary response to the sprawl of the modern city. If the units were individual houses, it would require 50,000 sq m of land, and

10,000 sq m of woodland. Bosco Verticale is the first element in his proposed BioMilano, in which a green belt is created around the city and 60 abandoned farms on the outskirts are restored to community use.

A hundred years ago, the world's most radical response to the expansion of the modern city was the construction of Letchworth, the world's first "Garden City", in Hertfordshire, north of London. To the social reformer Ebenezer Howard, London was polluted, crowded, and inhuman. He imagined a community that enjoyed the best of town and country: a garden for every house and a walk through fields for workers heading to factory jobs. The Garden City was imitated at Woodbourne in Boston and Chatham in Pittsburgh and was so influential that in 1907 Lenin stayed in Letchworth.



A portrait of Letchworth Garden City from 1913

In the past decade, Howard's idea has been reinvented as the Eco-City. Kate Henderson, chief executive of the UK's Town and Country Planning Association, has Howard's manifesto pinned above her desk. In a new exhibition at the London Garden Museum where I work, we explore rival visions for greener cities. More and more people believe that access to a garden, and to gardening, is a basic human need. But is the answer a traditional house and garden or should we be looking at gardens in the sky?

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For Rotterdam architects MVRDV, Howard's Garden City can no longer be an answer in a world with so many more people. At the core of the Dutch group's work is the idea of "stacking". The firm's pavilion at the Hanover Expo in 2000 was a multistorey structure in which sand dunes, meadows, and polders were stacked on top of each other. Its next provocative idea was Pig City in 2001, questioning what should be done in a country with 16m people and 15m pigs? It suggested pigs could be bred and raised in multistorey towers and descend in a lift to be slaughtered and processed on the lower storeys. The firm argued that animals would have better lives in the sky than on the ground, and the Dutch countryside would be liberated for people. And why not? To the Dutch it is time to ask hard questions about our relationship to food, cities, and nature.



Torre Huerta, a €12m social housing project of 96 apartments in Valencia, designed by Rotterdam-based MVRDV and MGAARQTOS

In Valencia, MVRDV is collaborating with MGAARQTOS to construct Torre Huerta, a €12m social housing project for a local authority. Some of the 96 apartments will have a balcony cantilevered 8m out into the sky, and with a deep belly as a pit for trees, positioned so that no one is in the shade. Valencia used to be surrounded by small plots on which families grew fruit and vegetables but these *huertas* are vanishing as the city expands into the countryside. Why not transplant these “condemned” plots into a vertical patchwork and pick oranges and lemons from the sky?

These towers in Milan and Valencia are possible because of a new collaboration between architects, engineers, and botanists. Boeri has had to explain many times the engineering and horticultural solutions required for an oak tree to grow up to 9m high on the 20th floor of a busy modern city. At the same time, this new movement is a visionary reclamation of the nature that has vanished from our cities. I can

never forget the public reaction to a cornfield planted outside the Garden Museum as an installation. In the busy centre of the city, commuters put down their briefcases and sat, silent. These projects unlock a primeval connection with the soil.

In the last lines of *The Great Gatsby*, the narrator imagines Manhattan as a flowering and innocent island before its discovery by Europeans. There’s a whisper of F. Scott Fitzgerald’s vision of redemption in LTL Architects’ presentation of a masterplan for the Greenwich South quarter commissioned by the Downtown Alliance, which imagines a future in which “New York’s air is as clean as it was before European settlement”. Paul Lewis, who founded LTL with his brother David and Marc Tsurumaki, says it is the first time the firm has printed the word “Utopian” in bold capitals.



LTL Architects' masterplan for the Greenwich South quarter commissioned by New York's Downtown Alliance

“Bicycle Epicenter”. The most eye-catching element is a “green sponge” 400ft in length to be built of glass and second-hand scaffolding over the Brooklyn-Battery Tunnel: wrapped in vegetation, it will filter the air and whirr with wind turbines. It is also a delicious piece of design, and LTL knows green architecture must be beautiful.

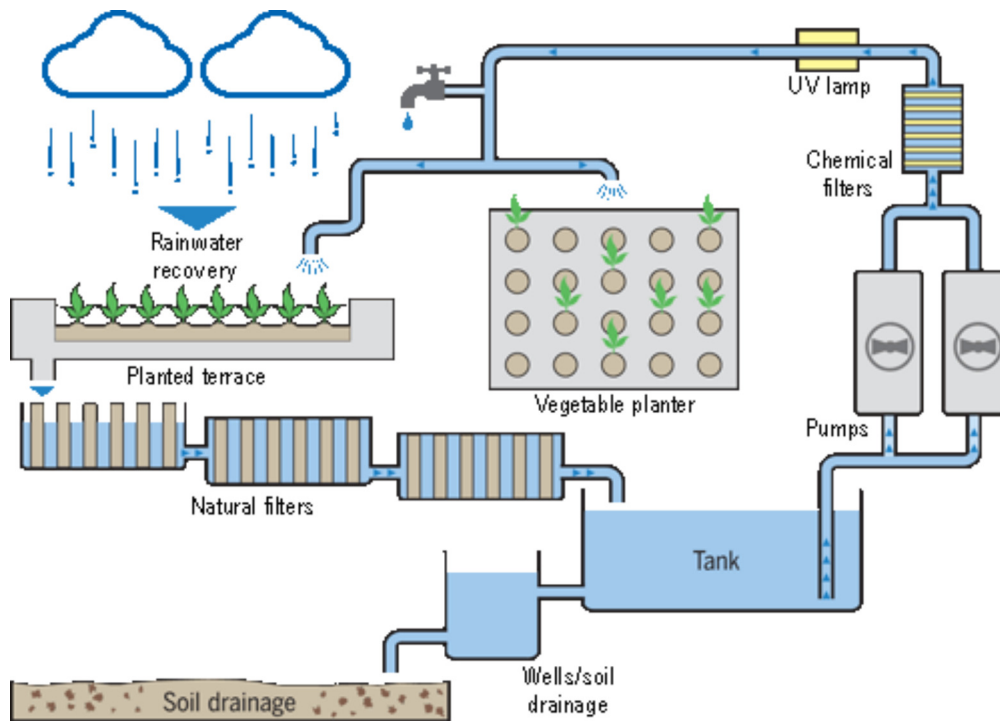
This is a successful practice, winner of the Cooper-Hewitt award for interior design, and these are cool and clever guys. At one level the Greenwich South masterplan is a pragmatic response using the latest eco-technology, such as a new cement that absorbs carbon dioxide from the air. But LTL recognises that design and technology cannot rescue the city from environmental crisis without a change in lifestyle. In its sketches, cars are few and far between and the spiritual centre is a highway converted into a



Harmonia 57, an office block in São Paulo by Triptyque

The cult “green building” of the moment is Harmonia 57, an office block built in São Paulo three years ago by Triptyque, four French-Brazilian architects who have set up practice in Brazil. Its walls are built of porous concrete, pitted so that plants grow into the surface, watered by mist collected in an ingenious system of pipes. “It is a building that breathes and sweats,” say its creators.

Boeri acknowledges that there is an alternative model of “green architecture”: design solutions and “smart appliances” for capturing energy and channelling that are invisible behind smoked glass and steel frames. Put another way, a building can meet the new environmental guidelines without the planting of a single shrub. But the “living architecture” movement goes beyond the current legislation: it is about how cities should feel.



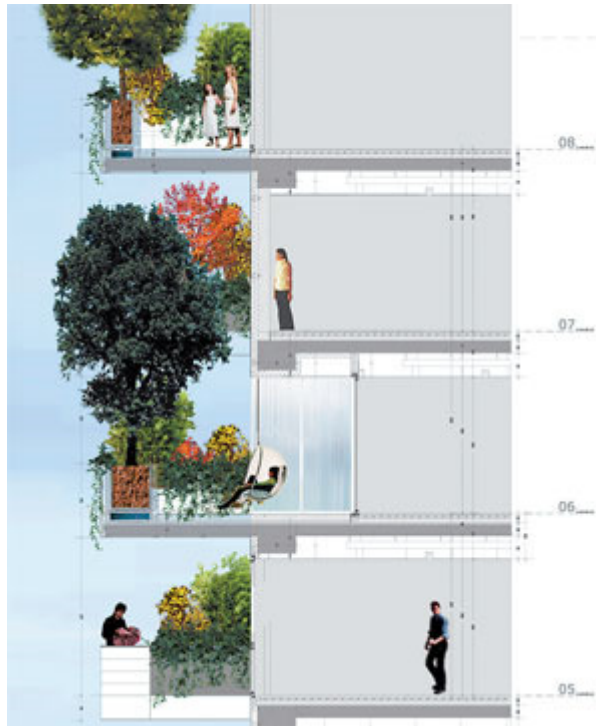
In Harmonia 57 mist is collected in an ingenious system of pipes, then used to water plants that grow in porous concrete walls

The hero of the movement to dissolve the boundaries between architecture and nature is Edouard François, who set up his practice in Paris in 1998. In an early project, he commissioned a “green wall”: the type of tapestry of plants fixed to an external wall that has become a fashionable cladding for boutique hotels and shopping centres. But the client turned off the water system in order to save money. In his next project, Tower Flower in Paris (2004), he resolved to make the living bamboo plots as inseparable from the structure as nuts and bolts. Does it add to the costs? The question is irrelevant: the client accepts he is commissioning a “living building”.

Eden Bio was a competition-winning design for 100 apartments and 12 artists’ studios in the hectic 20th arrondissement. François’ Paris is the city of Robert Doisneau not Baron Haussmann, and the units form an “urban hamlet”. Two greenhouses were built “in memory of the historic fruit gardens” of the neighbourhood. Between two rows of small houses – with deep window sills for François’ trademark flower pots – stands a long row of apartments faced with a trellis planted with wisteria and clematis. During construction, François intervened to prevent the contractor sterilising the ground with the usual chemicals. Instead, it was impregnated with seed.

François waited until this summer for the project to be photographed: after five years, the shrubs planted with that seed have grown 5ft high in the streets and the wooden structures have metamorphosed into vegetation. That’s a radical contrast to the standard practice in which a building is photographed and publicised on its first gleaming day. And it implies something deeper: its construction is only the first chapter in a spontaneous dialogue with the natural environment. And – hardest of all – to work with soil, water and seeds in addition to

glass and steel requires an architect to accept that he cannot dictate to posterity. Plants don't listen.



A cross-section of Bosco Verticale

The only landscape design of genius I have seen in London in the past five years is a scheme by Christopher Bradley-Hole and Brita von Schoenaich to plant a forest of native woodland on top of a new office building in the City of London. Londoners would emerge from a lift to escape to a world of mulch, leaves and bark. That design was ahead of its time. But five years later the first forest is rising into the sky over Milan. To idealistic architectural students, the glass skyscrapers in London or Shanghai are already anachronistic. Their heroes are writers, artists, and environmentalists – or architects such as Triptyque, François or Peter Zumthor, whose work begins and ends with nature.

Joseph Williams, a recent graduate, has started his first job in Mumbai. Architects are trained in technocratic solutions of filtration, ventilation and energy, he reflects, but they are not taught to understand the rhythms and seasons of the external environment.

His final year project proposed a housing scheme in east London that would be planted with an external trellis six storeys high. It is intended to filter the air and noise but also to create a “psychological detachment from the concrete jungle”. Critically, living architecture is as much about people as plants: neighbours in Eden Bio pause on their flowering staircases, and in Torre Huerta will exchange fruit picked from the sky.

We live at a time when boundaries between indoors and outdoors, architecture and nature are dissolving. As the naturalist John Muir wrote: “I only went out for a walk, and finally concluded to stay out till sundown, for going out, I found, was really going in.”

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[www.gardenmuseum.org.uk](http://www.gardenmuseum.org.uk)

*'From Garden City to Green City' runs until March 2012*

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