

30,000 BULBS | GARDEN TRENDS | VERTICAL FOREST

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TORONTO
BOTANICAL
GARDEN

Skyscraper
gardens
of the future
take root
in Milan

**By
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[Inspirational Gardens]

VERTICAL FOREST





Driving around on a bus tour of Milan, Italy last fall, I was amazed at all the balcony gardens on apartment blocks that we passed. Suddenly, a building that can only be described as a vertical forest appeared. It turned out there were two such towers each covered with trees, shrubs and other plants forming a kind of “green curtain” over each edifice.

Although not officially on our tour, the Bosco Verticale (Vertical Forest in English), I discovered through subsequent research, is the prototype for a new form of architectural biodiversity that focuses not only on people but also on the relationships between humans and other living species.

Designed by Stefano Boeri, the Vertical Forest is a model for a sustainable residential building, contributing to urban biodiversity without expanding land use.

The two Milan towers, completed in 2014, are 80 and 112 metres high, housing some 800 trees, 15,000 perennials and/or ground covering plants and 5,000 shrubs. The



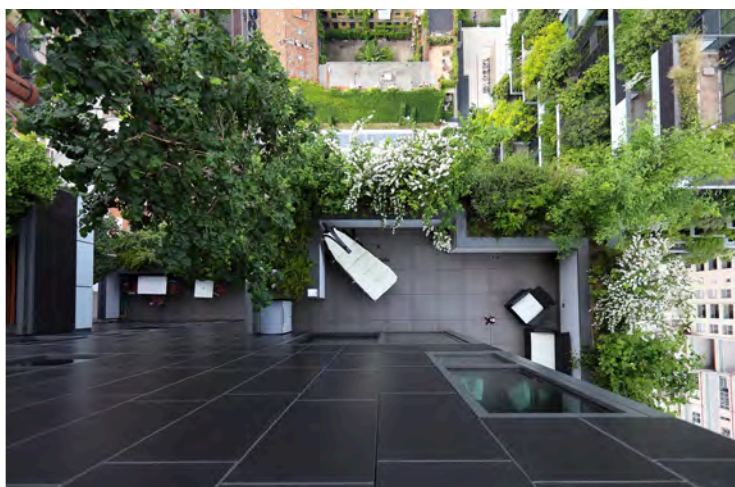
The two Milan towers house some 800 trees, 15,000 perennials and/or groundcovers and 5,000 shrubs equal to about 30,000 square metres of woodland on 3,000 square metres of urban surface.

buildings house an amount of vegetation equal to about 30,000 square metres of woodland and undergrowth consolidated on 3,000 square metres of urban surface, Thus, the Vertical Forest helps limit the sprawl of cities pushing for more greenery.

The “green curtain” regulates humidity, produces oxygen and absorbs CO₂ and microparticles, thus contributing to the reduction of both heat loss and air pollution. This combination has brought the project a number of awards, including the International Highrise Award in Frankfurt (2014) and the award for the Best Tall Building in the World from the Council for Tall Buildings and Urban Habitat at Chicago’s Institute of Technology (2015). The complex is also gold LEED (Leaders in Energy and Environmental Design) certified.

This new model of urbanization has large, staggered, overhanging balconies designed to accommodate large external tubs for vegetation and to allow the growth of larger trees, some growing to heights of up to three floors. The containers are protected with waterproof membranes and sheeting. Each has an automatic irrigation system.

View from one balcony looking down.





PHOTOS: BOERI STUDIO, GIOVANNI NARDI, MICHAEL HIERNER, DIMITAR HARYER

Plants were chosen following three years of study by a group of botanists and ethologists, and were pre-grown in a nursery with similar conditions to those on the balconies. As well as evergreen species, deciduous specimens include beeches, yellow acacias, oaks, ash trees, maples, fern and ivy.

Variations in plant colour, shape and texture produce an iridescent view in every season. The main inorganic growth medium is volcanic lapilli (small stones or grains) mixed with green compost and topsoil.

The plants are maintained by a team of arborists/climbers known as the Flying Gardeners. Using mountaineering techniques, they descend from the roof of each building once a year to prune and look after the plants.

In the few years since its construction, the Vertical Forest has been colonized by numerous animal species including some 1,600 specimens of birds and butterflies.

Conceived as a prototype of the skyscrapers of the future, vertical forests have been or are being designed by Boeri and others in such places as the Netherlands, China, Albania and France.

A plan to build a vertical forest in Toronto was proposed in 2018.

► To see a video of the Flying Gardeners at work
click here: <https://we.tl/t-tPJ4mdrPKp>

