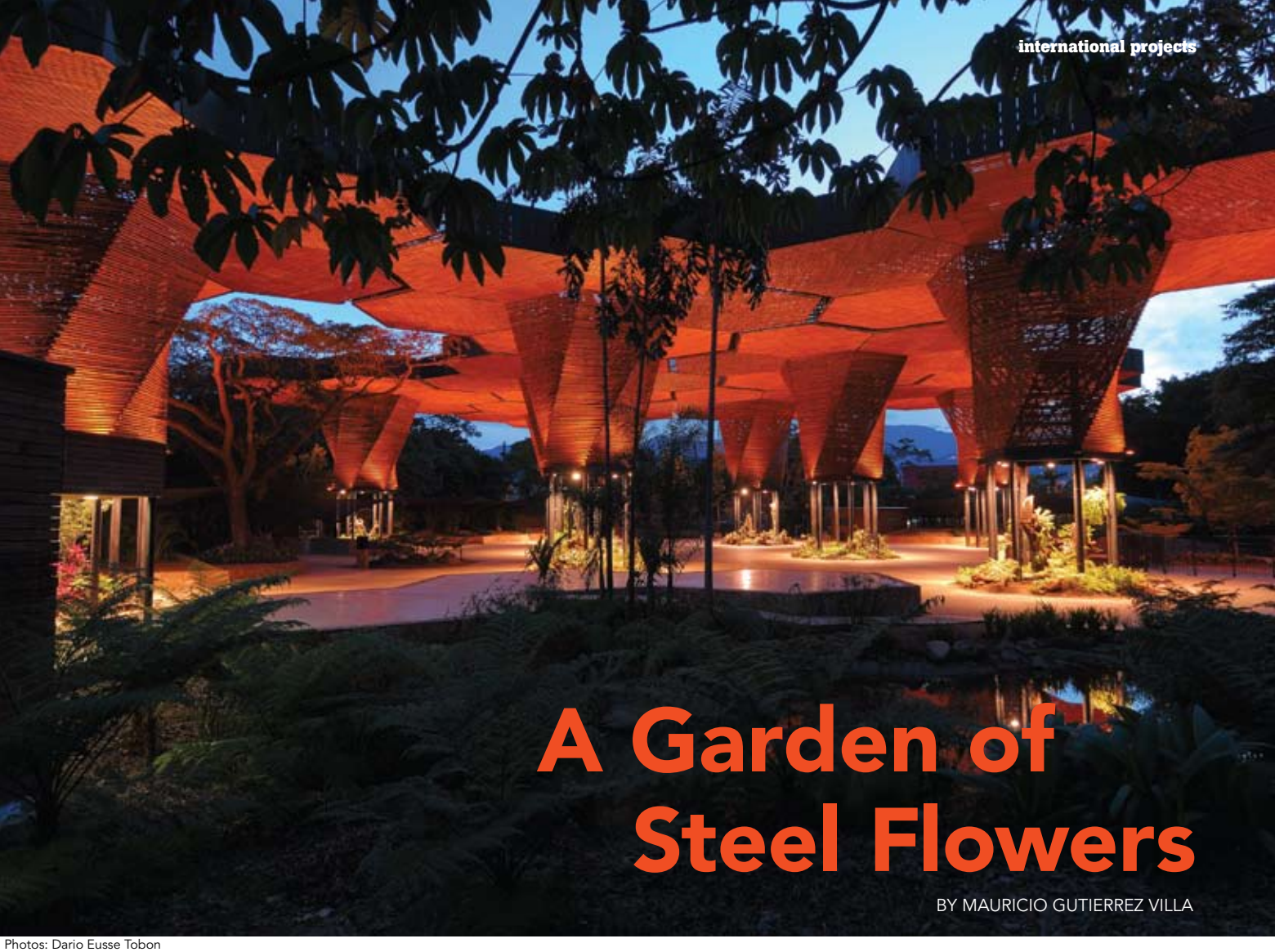

A Garden of Steel Flowers

BY MAURICIO GUTIERREZ VILLA

Photos: Dario Eusse Tobon

Hollow structural shapes help Medellín's Botanical Gardens blossom into a new icon for the city.

IT USED TO BE THAT WHEN YOU THOUGHT OF MEDELLÍN, COLOMBIA, YOU THOUGHT OF CRIME. But the twenty-first century version of Colombia's second-largest city paints a different picture. For the last decade or so, local administrators have focused on boosting the city's image and have poured significant funding into public parks, convention centers, libraries, and public transportation. In the process, Medellín has also become a city of avant-garde architecture—much of it using structural steel.

A new canopy shelter at Medellín's Botanical Gardens is perhaps one of the most representative icons of the city's recent improvement. Set on a small piece of native jungle in the heart of the city, the old Botanical Gardens were practically abandoned, with old enclosures that didn't attract local or foreign visitors and were deemed not worth restoring. However, the current local government—particularly in response to increased environmental awareness and conservation efforts—decided to transform the place into one of the most important landmarks of the city, one that would bring in tourists and also provide a base for scientific research.

In Harmony with Nature

With the new $2.2 million (USD) canopy enclosure (part of an overall renovation of the Botanical Gardens), the architects created a monument to nature, harmonizing the design with local natural symbols; bee hives and orchids—Colombia's national flower—served as inspiration for the project. The new enclosure covers an open plaza area and is constructed in the form of 10 huge steel "flowers," each made up of multiple hexagons. From the sky, the structure appears as a giant honeycomb in the middle of the jungle.

The enclosure is 59,000 sq. ft (5,900 sq. ft per flower), making it suitable for large outdoor events, and the flower structures are modular, allowing for future expansion. Each flower is 50 ft tall and weighs 62,000 lb.

The flower structures were fabricated with round HSS of diameters between 2 in. and 12¾ in. in ASTM A500 Grade C steel. Each flower was composed of more than 700 steel elements of various sections, diameters, lengths, and directions, creating a very intricate detailing process in terms of the welded connections.

The roof of the enclosure was made from standing seam tile, galvanized and pre-painted, and modified polycarbonate. On the inside, each flower was covered with immunized cypress wood slats with large

Left: Constructed of round HSS of varying sizes, the steel flowers consist of more than 700 members each.

Above: From the air, the steel canopy appears as a giant honeycomb.

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gaps between the slats, allowing visitors to view the steel structure. Due to Medellín's humid, tropical climate, the coating used for the structure was an epoxy base with finished epoxy paint.

The project's most significant challenge was that of time; it was necessary to complete the project within five months. And of course, construction took place during the most brutal rainy season of the last several years. The schedule was impossible to modify, as the structure had to be completed in time for the Feria de las Flores (Flower Festival), where the Botanical Gardens play an significant role.

Already a Winner

In April, the Botanical Gardens project was awarded the Colombian design prize Lápiz de Acero (Steel Pencil) for the best project of the year in terms of quality, aesthetics, and harmony with its surroundings, as well as for its practicality, environmental friendliness, and functionality.

With the Botanical Gardens and other projects over the past few years, Medellín has gone a long way in changing its late 20th century image and aims to present itself to the world as a city full of dynamic, architecturally significant—and steel-framed—buildings. MSC

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