

ICONIC METROPOLITAN MUSEUM PLAZA REDESIGN

New York City Landmark Outfitted with Innovative Green Infrastructure System

Founded in 1870, The Metropolitan Museum of Art in New York City is the largest art museum in the United States, housing more than two million works of art spanning over 5,000 years from around the world. Located since 1880 on Fifth Avenue on the eastern edge of Central Park, the museum welcomes more than 6.28 million visitors per year, and is surrounded by a massive plaza that spans four city blocks with an area of over 70,000 square feet. Arguably one of the most popular public spaces in Manhattan, by the 2010s the plaza was long overdue for a

makeover: the sidewalk was deteriorating, the fountains were dysfunctional, and the trees were dying. But the institution lacked the resources to renovate. That is, until a trustee of the museum became mesmerized by the idea of restarting the fountains, and the Museum launched a design competition to begin rethinking the plaza as a whole. The dramatic design put forth by OLIN was selected and the trustee agreed to contribute the full \$65 million to execute it.

New, granite fountains were designed by Fluidity Design Consultants and will be operational year round. In addition to moving these new fountains closer to the main entrance of the museum, OLIN's design also more than doubled the number of plaza trees from 44 to 106. To help ensure that the trees thrive, OLIN specified Silva Cells to provide more than 62,000 cubic feet of soil beneath the plaza. Once mature, the trees are expected to provide over 17,000 square feet of shade to the plaza. In addition to cooling the plaza, the trees and Cells serve another



much needed function. According to a press release issued by the Met: "Additionally, [the Silva Cell] system allows for extensive subsurface tree pits that now collect and utilize onsite stormwater that would otherwise have drained into the City's sewer system. Excess stormwater that is not captured by the subsurface tree pits [...] will be collected and directed into underground detention areas that hold and slowly release water into the City's stormwater system. This gives significant relief to the extreme demand put on the City's aging system."

In total, 4,180 Silva Cell frames and 2,250 Silva Cell decks were installed beneath the plaza to support the trees and allow the soil to collect and manage stormwater. The depths of the Cells vary between one, two, and three layers throughout the site due to large pipes below ground in certain areas. For example, New York City's main potable water line, dating back to the 1880's, could accommodate only a single layer system on top of it while other areas, where no utilities were present, could go deeper. Two allées of large Little Leaf Linden trees were planted

ing, overburdened sewer system. Above ground, the new plaza is a premiere destination in and of itself, a civic space reminiscent of the gardens of a European palace, while below ground state of the art technology is in place that helps the natural systems to work together with the urban infrastructure. In the words of Thomas Campbell, Director and CEO of the museum: "Finally, more than a century after the completion of the Met's grand Fifth Avenue façade, [...] the Museum has created a truly welcoming point of entry. Here now is a cityscape that is environmentally



along the Museum's Fifth Avenue façade, continuing the route of shade along the Central Park wall. Inside the central plaza, pairs of London Plane trees were planted adjacent to the 81st and 83rd Street entrances in a square grid at a 45 degree angle to the street, their trunks forming lines guide pedestrians toward the building entrances. Beneath the bosques lie casual, shaded seating areas comprised of 30 tables and 120 chairs, offering clear views of the landscaping and water features of the plaza. Further options for seating and additional shade are provided by benches adjacent to the allées of trees and a series of cantilevered parasols.

Thanks to these new trees and parasols, 40% of the total plaza area is shaded, reducing the surface temperature of the plaza by up to 25 degrees Fahrenheit. Additionally, the integration of trees, soils, and the Silva Cell system to process stormwater onsite provides a sustainable, synergistic means to relieve the city's ag-

friendly and will please our visitors as they come to experience the unparalleled breadth of masterpieces on display inside."

Installation Summary

Average soil volume per tree (shared): 454 ft³ (12 m³)

Number of Trees: 92

Total Silva Cells: 4,180 frames, 2,250 decks

Installation Date: January – June 2013

Installation type: Integrated – Trees & Stormwater

Project Site: Plaza

Project Designer: Olin Partnership

Contractors: Kelco Landscaping and Construction

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