

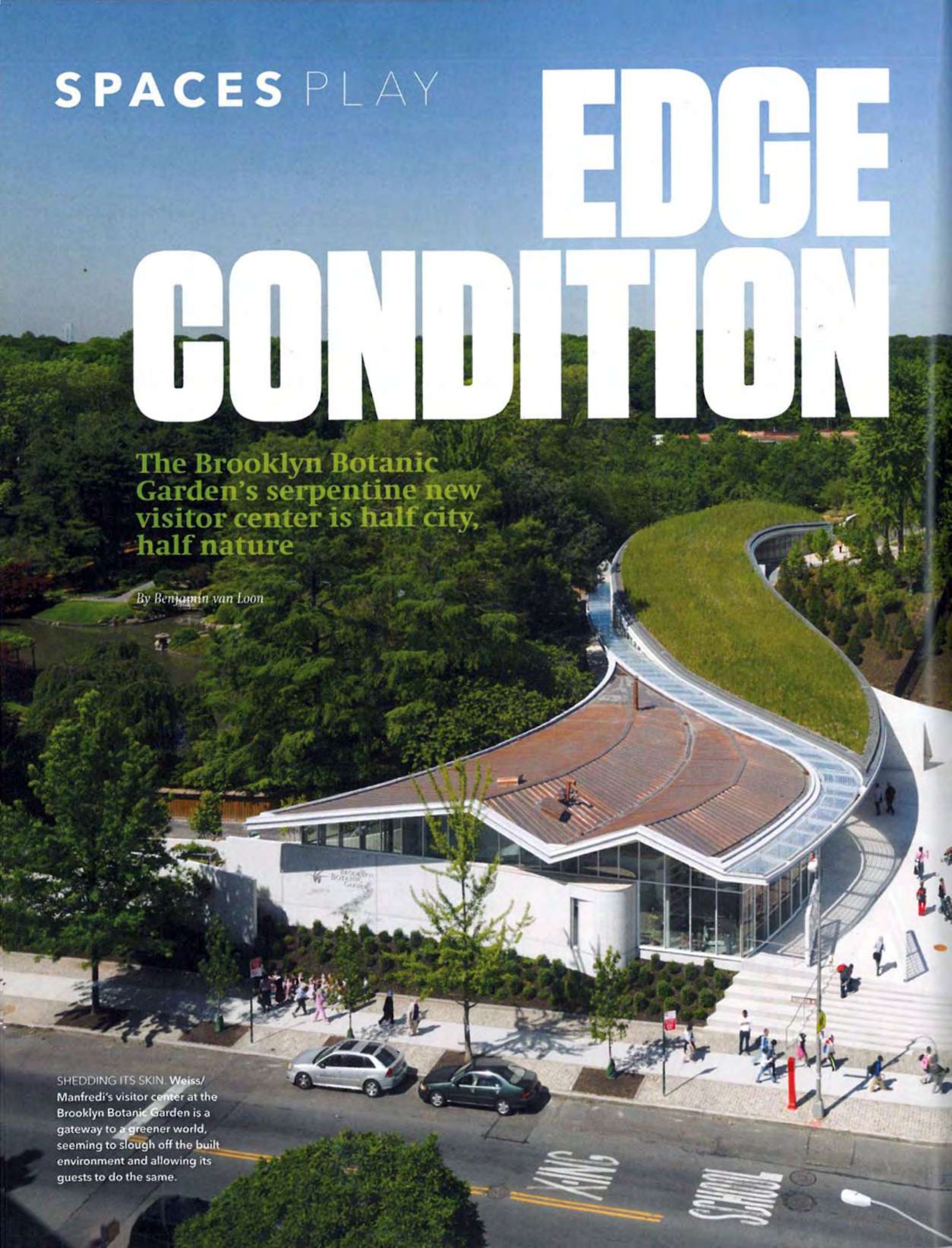
SPACES PLAY

# EDGE CONDITION

The Brooklyn Botanic Garden's serpentine new visitor center is half city, half nature

By Benjamin van Loon

**SHEDDING ITS SKIN.** Weiss/Manfredi's visitor center at the Brooklyn Botanic Garden is a gateway to a greener world, seeming to slough off the built environment and allowing its guests to do the same.





PHOTOS: ALBERT VEČERKA/VESTO; DIAGRAM: WEISS/MANFREDI

**W**hile Central Park sits in the center of Manhattan like a defiant, 843-acre glimpse into a world that might be, the new visitor center at the comparatively diminutive

52-acre **Brooklyn Botanic Garden** welcomes the public to a version of New York City as it is *meant to be*. With its lanceolate living roof, curving glass walls, and 42,000 square feet of freshly planted landscape, the \$28 million, 22,000-square-foot visitor center, as designed by **Weiss/Manfredi Architecture/Landscape/Urbanism** and completed in May 2012, responds to the ongoing gentrification of Brooklyn by conciliating the city's diverse ecological past with its rapidly evolving urban future.

"We're very much concerned with working at the intersection of landscape and architecture," says **Michael Manfredi**, principal and founding partner at Weiss/Manfredi. "In working on this visitor center, we really wanted to blur the distinctions between what is architecture and what is landscape. In that sense, the building literally melts and transitions into the garden, creating a new building typology and way of looking at buildings."

This transitory schema is an iteration of the greater legacy of the Brooklyn Botanic Garden (BBG), which is to function as a natural oasis in the midst of a concrete and steel sea. Founded in 1910, the BBG is set on a scalene plot of land,

This sketch shows Weiss/Manfredi's "city to garden" idea, using the building to transition visitors from an urban environment to nature.



flanked by Flatbush Avenue on the west and Washington Avenue on the east, and affixed to the northeastern section of the 585-acre Prospect Park, which was designed by Central Park architects Frederick Law Olmsted and Calvert Vaux in 1867. Although the Prospect Park area has a diverse social history, it is set in a largely residential borough. With the exception of the expansive Beaux-Arts Brooklyn Museum and Soldiers' and Sailors' Arch and a handful of other landmark commercial and residential structures in the immediate vicinity, the native vocabulary is defined by modesty and pragmatism, accented with a warm, pedestrian patina that renders Brooklyn streetscapes simultaneously insignificant and iconic.

Respondent to this manifold heritage, Weiss/Manfredi's intent for the visitor center at the botanical garden resists the contrarian strain of modern sustainable architecture by favoring function over form. However, its plan, which began in 2005, was still carried out with creative insistence.

"When we first sat down to interview, we saw that the BBG had a master plan that located the visitor center near the center of the garden," recalls **Marion Weiss**, principal and founding partner at Weiss/Manfredi. "We suggested a new location for the building that would greet you at the city edge, on Washington Avenue, and lead you into the garden so that you could shed the experience of the city and discover the garden through the visitor center." The planned location was a parking lot the BBG shares with the Brooklyn Museum. While programatically sensible, this site failed to account for what would have been an abrupt transition between cosmopolitan and botanic areas. "Realistically, you can say that we started the project almost 20 years ago as residents of Brooklyn and people passionate about the [botanical garden] as an extraordinary urban oasis," Weiss says.

**HIDDEN AWAY.** Viewed from within the existing botanical garden, the new visitor center disappears intentionally into the greenery.



#### PROJECT

**LOCATION** Brooklyn, NY

**Size** 22,000 ft<sup>2</sup>

**Completed** 2012

**Cost** \$28 million

**Program** Visitor center with exhibition galleries, orientation room, gift shop, event space

**Awards** New York City Public Design Commission Award for Excellence in Design, The Chicago Athenaeum's Green Good Design Award for Green Architecture, ENR New York Best Projects 2012

#### TEAM

**ARCHITECT** Weiss/Manfredi  
Architecture/Landscape/Urbanism

**Client** Brooklyn Botanic Garden

**General Contractor** E.W. Howell

**Construction Manager** LiRo Group

**MEP/FP & IT** Jaros, Baum & Bolles  
Consulting Engineers

**Landscape Consultant** HM White  
Site Architecture

**Environmental Consultant** Viridian  
Energy & Environmental

**Geothermal/Geotechnical** Langan  
Engineering and Environmental  
Services

**Lighting Design Consultant**  
Brandston Partnership

**Curtain Wall Consultant** R.A.  
Heintges & Associates

**Structural & Civil Engineering  
Consultant** Weidinger Associates  
Consulting Engineers

#### GREEN

**CERTIFICATION** LEED Gold  
(expected)

**Landscape** 42,000 square feet of  
new botanical plantings

**Roof** 10,000-square-foot specially  
curated living roof

**Curtain Wall** Custom-fitted, low-E  
insulated glass and aluminum  
mullions

**Geothermal** 28 ground-source  
thermal wells

**Materials** Recycled concrete, steel,  
and site-harvested ginkgo wood

**Thermal Mass** Building nested in  
existing berm

Weiss/Manfredi's new location was a bermed grove of mature ginkgo trees that opens up to the city on Washington Avenue. A sigmoidal path, originally designed by Frederick Olmsted, cuts through the center of the grove and the geometry of the visitor center submits to that topography while nesting into the extant berm, rather than willfully imposing itself upon it. Functionally, this allows for natural thermal mass and a more efficient envelope without interrupting the flow of the site.

Viewed from the garden side, the structure is hardly distinguishable from the surrounding landscape, and this is aided by both the gentle architectonics of the building as well as the 10,000-square-foot living roof hosting more than 40,000 plantings, which include warm and cold season grasses, perennials, and bulbs. **Armando Petrucci**, a project manager for Weiss/Manfredi, notes that the BBG did have to relocate its world-renowned herb garden, yet the visitor center's new green roof actually gives the garden an opportunity for another collection. "It's an experimental green roof that the BBG will be curating," he says. The roof also minimizes and collects storm-water

**A PLANTED PORTAL.** At night, the main atrium becomes a lantern amid the trees, topped with a green roof. For more on how the visitor center is lit, turn to p.121.





**ALL ABOUT THE GLASS** Distinct in its use of high-performing, ceramic frit-patterned insulated glass, the building utilizes Ecklet/St. Gobain glass with a ClimaCool SKN 072 low-E coating. Curved units are similarly composed by Precision glass. The exterior canopy, also with Ecklet/St. Gobain glass, continues the ceramic frit-pattern lamination and allows for daylight to enter the interior while minimizing heat gain.

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**Michael Manfredi, Weiss/Manfredi**

runoff, diverting it into two separate rain-garden plazas on-site, which are part of the greater 42,000 square feet of new landscaping—featuring more than 60,000 new plantings—created by Weiss/Manfredi and landscape consultant **HM White**.

In the upper terrace area surrounding the visitor center, Weiss/Manfredi and HM White designed a stepped set of terraces, each planted with unique flora to mediate between the green roof and the ginkgo trees at the ridge of the berm. Plant identities are amplified along the urban edge of the site with street tree plantings, further melding interaction between the city and botanic environment.

“It was important for the BBG to incorporate new cultivars of plants that are native to the region,” Petrucci says. “These species aren’t identical to what is in the garden but are specific to the center itself, further emphasizing the idea of a new collection.”

Elements of the ginkgo landscape were diverted during construction. One ginkgo tree was relocated to a different portion of the grove, and another ginkgo tree, unable to be relocated, was kiln-

dried and converted into the lining of the 2,500-square-foot event space, which is adjoined to the visitor center via a shaded breezeway.

There was a previous visitor center on-site prior to 2005, but it lacked a program sufficient for supporting the Brooklyn Botanical Garden’s 900,000 annual visitors. The new center accounts for ticketing, information and exhibition galleries, an orientation room, gift shop, and an additional 2,500-square-foot event space that will accommodate private functions and public gatherings.

As it was completed in May 2012, LEED certification is still underway for the project, but the BBG has a goal of LEED Gold, which will be bolstered by the center’s ‘enhanced commissioning’ process. “Energy consumption was one of the primary components we wanted to address,” Petrucci says. “We were able to reduce this consumption by designing a geo-exchange system which is comprised of 28 ground-source thermal wells, which serve the cooling and heating demands of the building.” High-performance fritted glass that forms the curtain walls of the building



complements these energy consumption demands by helping to reduce heat gain and infuse the interior with daylight illumination. Overflow storm water collected on-site is diverted to the park’s Japanese pond. Architectural concrete and steel for the structure was partly sourced from recycled elements, but the architectural elements—including a custom, pleated copper roof designed to mimic the botanical garden’s **McKim, Mead & White Administration Building**, built in 1917—are necessarily minimal, suggesting that the new visitor center is just as cooperative with the landscape as it is with Brooklyn’s dynamic urbanism.

“At 52 acres, with a network of paths and different curated landscapes, the garden is a place of discovery,” Weiss says. “Being able to design a building that is as much embedded within as it is extending the systems of pathways, discoveries, and unfolding vistas—and the extent to which the building can capture those identities—is really about inverting the paradigm of a building freestanding on the landscape as an object. Where the building begins and where the garden ends becomes very ambiguous—very strategically and very purposefully.” **gb&d**

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A MESSAGE FROM **E.W. HOWELL**

*E.W. Howell is a well-established general construction and construction management firm celebrating more than 120 years of building excellence. With offices in Manhattan and headquarters on Long Island, we provide construction services throughout the region to a diverse group of clients including retail, education, government, cultural, and health-care organizations.*





## HOW THE VISITOR CENTER IS LIT

The Brooklyn Botanic Garden Visitor Center is more landscape than architecture, yet the building is just as visual as it is experiential. The subtlety of the center's lighting reinforces its role as half city, half garden.

### ATRIUM / EVENT SPACE

**Uplighting:** Ceramic metal halide fixtures, manufactured by LSI, are attached to the steel columns in the event space to reflect soft ambient lighting off the leaf-shaped acoustic ceiling.

**Downlighting:** Also attached to the steel columns, these LSI-made surface mounted halogen fixtures with 100W lamps provide an additional lighting layer and are used to illuminate the inset wood floor, furniture, and people occupying the space. These lights are fully dimmable to set the mood, controlled by the Lutron Grafik Eye 3000.

**Adjustable accents:** Recessed Kurt Versen MR16 lights in the ceiling provide front lighting for special functions.



### RECEPTION GALLERY / BREEZEWAY

**Uplighting:** Wall-mounted MH asymmetric forward-throw uplights, manufactured by Elliptipar, are controlled by an astronomical time clock provided by Douglas Controls to create ambient lighting for the space.

**Tracklights:** Ceiling-mounted recessed, flangeless, two-circuit track lighting with accent ceramic MH track heads, manufactured by LSI, provides accent lighting for exhibits and occupants.



### MONUMENTAL STAIR

Modified Béga B8032LED and B8031LED exterior recessed LED steplights are mounted in concrete and ornamental steel risers and provide warm white lighting at night.

### OUTDOOR PLAZAS (opposite)

Compact, 9W, fluorescent steplights are mounted into the finished concrete wall and moderated by an astronomical time clock on relay zone.

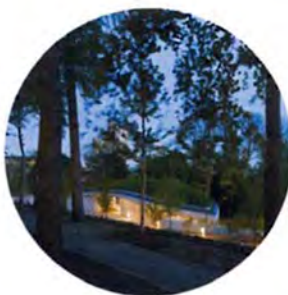


### PATHWAYS (this page, left)

Arklight VaporProof AVB-21 surface mounted vapor-tight lights with screw base self-ballasted CFL lamps and opal glass diffusers are mounted to steel bollards.

### TREE GROVES

CMH adjustable accent lighting, from BK Lighting, are mounted using the PowerPipe II stake system that hides the integral magnetic ballast in the ground while causing minimal disturbance to nearby tree roots.



### GIFT SHOP (not pictured)

Pendant, mounted, and suspended from the ceiling with aircraft cable, the Erco Hi-Trac lighting system's integrated fluorescents provide ambient uplighting reflecting off the ceiling, while a two-circuit track powers the ceramic MH accent lighting for merchandise.

**NATURAL ORDER** (Clockwise from top) The lining of the daylit event space is wood from a ginkgo tree, kiln-dried after it couldn't be relocated. The building became part of the botanical offerings, with a tiered green roof planted with distinct species. A view of the plazas shows the potential for discovery and exploration via sloped and curving pathways.

