Sixty-foot column-free spaces in the podium level are made possible by perimeter tower columns that transfer onto large, built-up plate girders at the 10th floor.

7 Bryant Park

With an innovative conical design, a luminous stainless steel and glass curtain wall allows a new office tower to be an extension of the neighboring park.

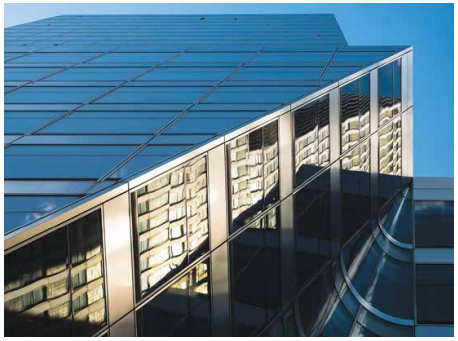
FROM INSIDE 7 BRYANT PARK, a new spec office tower designed by Pei Cobb Freed, visitors have a bird's eye view of the ice skaters at Bryant Park and, if they could score an invitation come November, eye contact with the balloons in the Macy's Thanksgiving Day Parade.

The panoramic views—made possible, in part, by 10-by-10-foot window modules—and a few other subtle gestures on the part of the architects and developer Hines make 7 Bryant Park a generous workspace. (Bank of China will lease the first 14 floors and the 28th, moving in later this year.) Those same moves are also what elevate the level of design and make the structural steel-framed building—what could have been a bland, rectangular glass tower—a good neighbor. "It was important to make this building a gesture to the park," says Yvonne Szeto, a partner at Pei Cobb Freed. "That's the greatest value of the site."

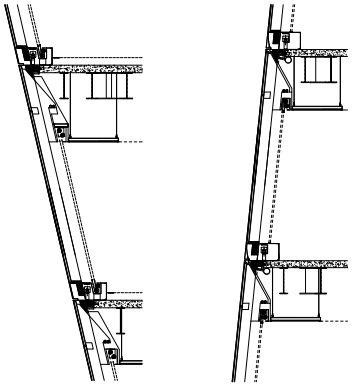
The most obvious of those gestures are the two conical scoops that the architects carved out of the northeast corner of the 28-story tower; with their apexes appearing to touch, the inverted cones look like a geometric hourglass. Knowing that zoning required a setback at 150 feet, Szeto and her team designed one cone to begin there, at the 10th floor, widening as it stretches to the sky. They took advantage of the setback to create terraces on the north and east elevations of the 10th floor. (Another terrace extends from the 14th floor to the south.)

The other cone is the mirror opposite, descending from the 9th floor down to the entrance, where it terminates in a bowl-like canopy that shelters benches for the public and a water feature. "By carving at the bottom of the building, we've created a new public space that is an extension of the park," says Szeto. "It's a contribution of this private building. And carving at the top creates a new profile in the skyline. Any tall building should be a good citizen." By cutting away from the corner of the building to create the plaza, Hines gave up what would have been valuable retail space in return for a better functioning building and the chance to make a civic gesture.

The elegant entrance canopy has an aesthetic simplicity that belies its structural feats. With a radial steel substructure that the architects said is so beautiful they hated to cover it up, the canopy panels are curved laterally and longitudinally. A quarter of the circle is glazed, allowing visitors a dizzying view to the cones above. The 48-foot-diameter canopy and its connection to the façade was tricky, says Jesse Chrismer, associate at Thornton Tomasetti, the engineer for the project. "The structural steel members can be seen through the skylight," says Chrismer. "Because of this skylight, considerable efforts had to be taken to coordinate their appearance as exposed members, versus sizes and locations that were most effective structurally." The canopy is supported by two cantilevering plate girders, which project perpendicularly from each adjacent façade and converge slightly off-center of the central, rigid



Clockwise from top left In the cones, the spandrels are frosted panes of glass illuminated by interior LED coves. Sections of the podium cone (left) and of the tower cone (right). The cones create uniquely curved window bays at each floor. The building's structural system consists of a concrete core with steel framing.



steel hub. The plate girders are 3 inches deep with 3-foot-thick flanges. The tapered main canopy framing radiates out from the central hub in 24-foot cantilevers. Smaller circumferential HSS framing provides rigidity and coincides with connection points for the cladding. At the skylight portion of the canopy the exposed members necessitated a different framing method. Here, curved HSS beams provide the primary support, with smaller radial infill framing stiffening the system and supporting the glazing.

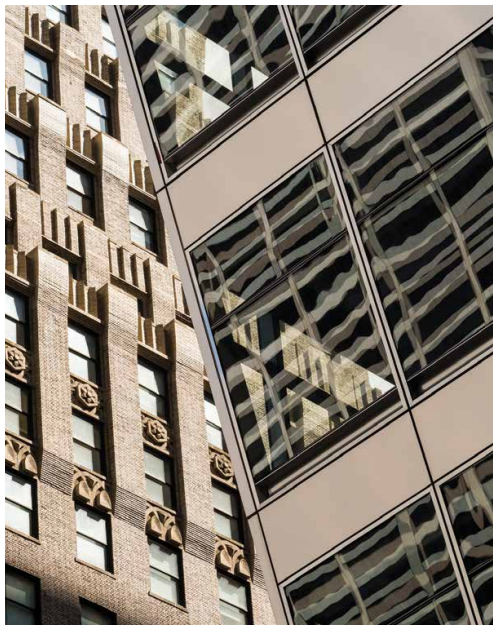
The architects carried the conical motif inside the building, with triangles of limestone, white marble, and black granite on the floor, stone walls serrated in a V pattern, and concave conical lighting coves in the ceiling. A living wall at the rear of the lobby softens the look and brings a hint of the park indoors.

From a typical office floor, one can see how carefully the architects balanced the proportions of steel and glass on the curtain wall, which is made of Type 316 linen-finished stainless steel spandrels. The exterior of the window system is polished aluminum and the interior is painted aluminum with a Duracon finish. While most commercial buildings in Manhattan have a 5-foot vertical module, Pei Cobb Freed decided on floor-to-ceiling lites of low-E glass that are 10 feet wide and 7 feet high. Total panel dimension is 10 feet by 10 feet, divided by a suppressed muntin about ⅔ of the way up. "It gives a more generous feeling on the façade," says Bruce White, associate partner. "On the inside you get a much more panoramic view—you don't have the jail bars of vertical lines." Hines agreed, knowing tenants would want open office plans and wouldn't need to necessarily need connect to mullions.

On the cone, where each curved unit is a different size, the architects conceived what they call the "scoop"—a horizontal aluminum incision on the exterior, between the glass and the top of the steel

Top left: Fernando Guerra; all others: Pei Cobb Freed & Partners; opening page: Albert Vecerka/Esto

Above left column: Albert Vecerka/Esto; above right: Fernando Guerra; following spread clockwise from top: Albert Vecerka/Esto; Fernando Guerra; Albert Vecerka/Esto



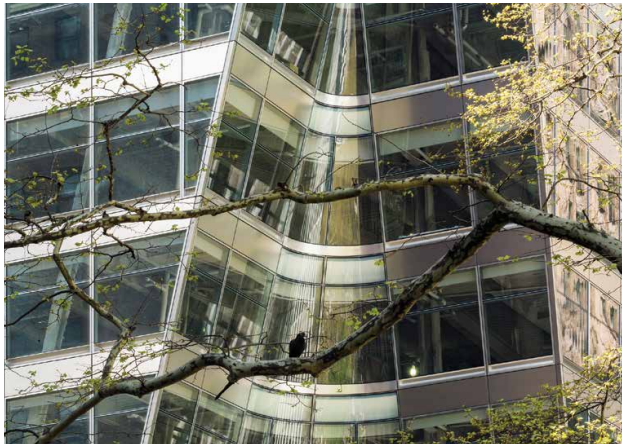
Clockwise from top The curtain wall features linen-finished stainless steel spandrels with integral gutters. The office tower offers expansive views of Bryant Park through floor-to-ceiling window modules. A recessed curve at the park-facing entrance to the building is crowned by a 48-foot stainless steel canopy that cantilevers over a public plaza.

spandrel. The scoop helps with energy conservation overall (limiting the amount of glazing), while making the metal spandrel appear slimmer and dynamically reflecting light. Inside the structure, the architects installed a rear fascia to the top of the glass panes and inserted cove lighting fronted by a frosted glass panel. This casts a warm glow inside and creates a dramatic exterior lighting effect. Hines can change the colors and pattern as they wish (though they swear they have no desire to compete with Times Square).

Surprisingly, the cone resulted in only the expected challenges associated with sloping columns, according to Thornton Tomasetti. The perimeter columns go up about three or four floors and then they slope. Though White admits that they appear somewhat awkward, their positioning made the most sense structurally. Framing was cantilevered off varying sizes of sloping columns (the largest being a W14x655) to support the edge of slab around the cone shape. (There is no floor slab on the 29th level, which contains the mechanical room and where the architects were able to create a small roof terrace; therefore, long, curved, steel girts support the top of façade.) However, a more advanced modeling program with 3D capabilities was necessary because of the volumetric component of the connections.

On typical office floors, the architects left the fit-out to the future clients. They transferred out columns where they could, leaving a clear span of 64 feet in the podium and 45 feet above the setback. "On the ninth floor, the steel beams are significant to deal with the setback," says Szeto. Her team also worked hard to pre-cope and pre-cut holes for all of the ductwork, so that ceiling heights could be maintained. A spiral stair is planned to connect the 10th and 11th floors, the executive levels for Bank of China.

In creating the entrance canopy and plaza for the building, Pei Cobb Freed had to do away with an existing New York City subway entrance. Mandated to absorb the entry, the architects convinced the Metropolitan Transportation Authority to allow them to reroute it to the northeast corner of the building, especially since they discovered that most people using the original entrance were headed in that direction anyways. The architects devised a simpler steel canopy that directs commuters down a staircase to the station. They clad the adjacent wall in a cheerful rainbow of tiles against jet mist granite. Just another dignifying element to a project that, while private, is democratic in its key design elements. □



Top The cones appear to embrace the adjacent park and animate the façade.
Above Thornton Tomasetti was able to re-engineer the mechanical room on the 29th floor to make space for a roof deck. Because there is no floor slab at the very top of the cone, long steel girts support the top of the façade.
Facing Extending another cone from the 10th floor to the top of the building creates a new profile in the skyline.

7 BRYANT PARK

Location: **7 Bryant Park, New York, NY**
Owner: **Bank of China**, *New York, NY*
Developer: **Gerald D Hines Interests**, **Pacolet-Milliken Enterprises, Inc.**, *New York, NY*
Architect: **Pei Cobb Freed & Partners**, *New York, NY*
Structural Engineer: **Thornton Tomasetti**, *New York, NY*
Mechanical Engineer: **Jaros, Baum & Bolles**, *New York, NY*
Construction Manager: **Turner Construction**, *New York, NY*
Curtain Wall Consultant: **Pei Cobb Freed & Partners**, *New York, NY*
Structural Steel Fabricator: **W&W Steel**, *Oklahoma City, OK*
Structural Steel Detailers: **Thornton Tomasetti**, *New York, NY*; **W&W Steel**, *Oklahoma City, OK*
Structural Steel Erector: **W&W Steel**, *Oklahoma City, OK*
Miscellaneous Iron Fabricator and Erector: **Empire City Iron Works**, *Long Island City, NY*
Miscellaneous Iron Fabricator and Erector: **United Structural Works**, *Congers, NY*
Ornamental Metal Fabricator and Erector: **Jonathan Metal and Glass**, *Jamaica, NY*
Curtain Wall Fabricator and Erector: **Benson Industries, Inc.**, *New York, NY*
Metal Deck Erector: **W&W Steel**, *Oklahoma City, OK*