

PCL, partners celebrate topping off downtown Toronto's modern landmark

April 5, 2023

Recently, ironworkers placed the final curved steel beam 47 storeys above downtown Toronto, crowning Cadillac Fairview's [160 Front Street West](#) commercial office tower, a few minutes walk away from the CN Tower.

Topping-off is typically celebrated when a building reaches its' maximum height. In the case of a steel structure, celebrating the placement of the last beam is considered a major milestone for the ironworkers, construction team, and owners involved in erecting the building.



Image 1 of 4 - In topping off 160 Front Street West, the final beam was signed by ironworkers and adorned with a small evergreen tree, which is symbolic of the structure safely reaching the sky, along with good luck and prosperity for the new tenants of the building. Photos courtesy PCL Constructors Canada Inc.

Earlier, the beam was signed during an event hosted by Cadillac Fairview for future tenants: TD Canada Trust and Ontario Teachers' Pension Plan. Representatives from PCL, Walters Group, and consultants who were key to the steel program also signed the beam prior to placement.

160 Front Street West broke ground in 2019. It is a 46-storey structural steel-framed commercial office tower designed to add a distinctive silhouette to the city's skyline. Its unique, asymmetrical shape was designed to reflect the surrounding cityscape. To be wrapped in a combination of glass and steel, the building aims to deliver a sleek and modern appearance. Although complex, PCL's in-house building envelope experts optimized the design and constructability of the curved cladding, so it wraps around all four exterior walls and integrates the heritage masonry of the 70-year-old, six-storey building previously located on this site.

The gradual installation of the arched metal frame overlaps the building's lower southeast corner, with the two curves defining the transition between the preserved heritage brick facade and the modern glass curtain wall system above. The structural steel design-assist partner, Walters Group, supplied and erected approximately 12,000 tons (10,886 tonnes) of structural steel and 99,406 m² (1.07 million sf) of metal deck for the main tower and podium. Due to the unique geometry of the steel structure, special post-tensioning details along with structural pin connections were incorporated to ensure the interface between the two build materials worked together.



Image 2 of 4 - A view of the structure with CN Tower in the background.

On the ground level, sloping columns and temporary shoring were used to keep the building stable during erection and to protect the heritage facade. At the top of the crown, the white

curved architecturally exposed structural steel (AESS) pipes allow the building structure to accommodate the amenity space, known as the sky atrium.



Image 3 of 4 - A view of the construction team perched on the top of the steel structure.

The design for the tower was through the collaboration of international architects Adrian Smith + Gordon Gill Architecture (AS+GG), and B+H Architects (B+H). Lateral loads are oriented to the building's central axis, resulting in a design tapered at the top and the bottom, while supporting the structure for optimal wind resistance and creating spaces with unobstructed corner views. The tapering at the bottom also allows for expanded pedestrian walkways in the congested location in the financial district.

The building offers a total floor area of approximately 116,129 m² (1.25 million sf) over 1,115-m² (12,000-sf) of retail space, a four-storey summit platform, and four levels of below-grade parking for 324 cars and storage for 507 bikes.

The sky atrium, located on the 47th floor, will contain a large, open-air space to provide stunning views of the city, surrounded by several smaller gardens and trees. Cadillac Fairview is pursuing Leadership in Energy and Environmental Design (LEED) platinum and WELL Certified certifications.

“Constructing a steel office tower is unique in the Toronto market and we’re proud to have reached the top as we build Cadillac Fairview’s vision for their newest landmark building in Toronto, along with our talented construction and design partners.” says Monique Buckberger, vice-president and district manager, PCL Constructors Canada Inc. “Placing the final steel beam

is a significant milestone for all those involved. Thank you to the hundreds of men and women who have contributed to building this project with safety and quality top of mind.”



Image 4 of 4 - A rendering of 160 Front Street West. Image courtesy Adrian Smith + Gordon Gill Architecture (AS+GG) and B+H Architects (B+H).