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Announcing the Winners of the Inaugural USGlass

Design Awards

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Design Award Winners

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181 Fremont

San Francisco, Calif.

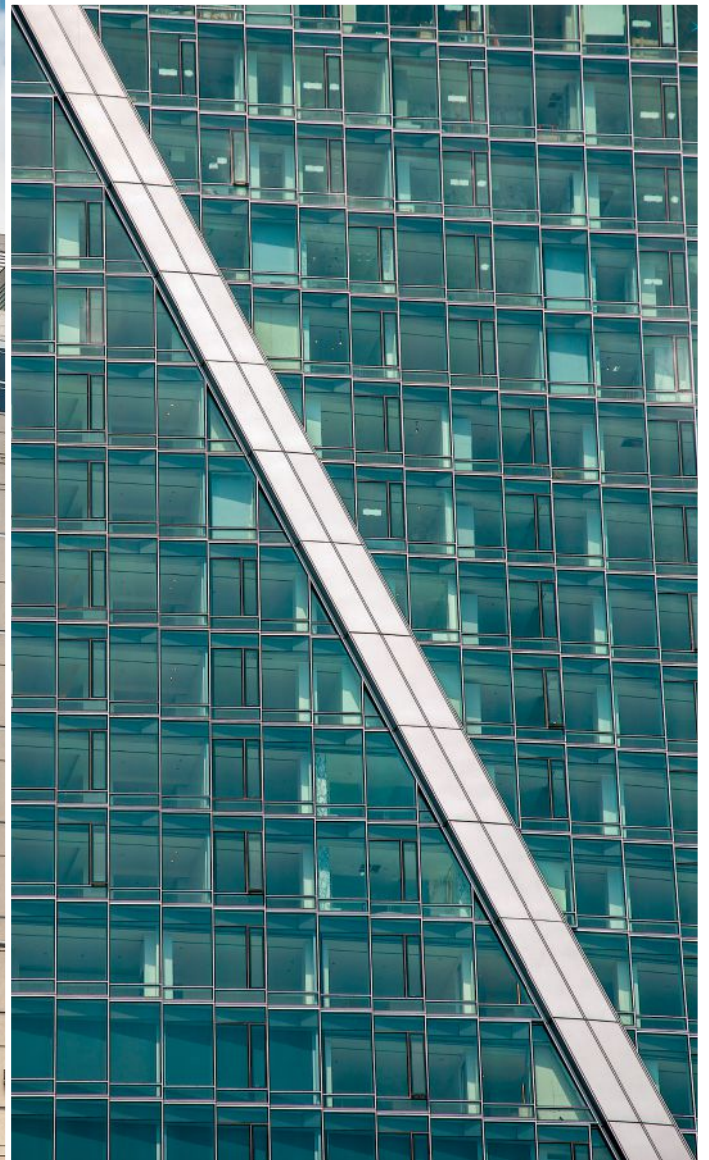
Completion: June 1, 2018

Square Footage: 240,000

Architect: Heller Manus Architects

Glazing Contractor: Benson Industries

Glass Suppliers: Vitro Architectural Glass (primary); Hartung Glass (fabricator)



Designed to be the most resilient tall condominium on the West Coast, every square-inch of 181 Fremont was engineered for high performance, including the innovative, unitized curtain-wall system constructed with Solarban 70 glass. LEED certified at the Platinum level, 181 Fremont was designed to enhance the energy performance of the 55-floor, mixed-use tower by incorporating fully glazed floor-to-ceiling windows.

One of the most unique details of the project is the sawtooth pattern throughout the curtainwall. This acts as a passive solar design system with angled window mullions that face slightly inward against one another. Due to its ability to block heat while transmitting light, the glass accentuates the performance of the angled window mullions, which function as a shading device as the sun passes over the building each day. The sawtooth design created hundreds of unique curtainwall units, and each had its own 3D model, where the connections and milling could be studied in depth. The diagonal elements of the glass façade required retention cages that encroached on the anchor zone. This required several months of modeling to avoid conflicts with the cladding. The sealant joints between the glass and aluminum frames were a half inch larger to ensure the most extreme seismic racking, helping the structure achieve its Resilience-based Earthquake Design Initiative (REDi™) Gold Rating.

In addition, the angular glass façade helps reduce the heavy windload associated with the San Francisco area. Traditional smooth-sided buildings accelerate winds and increase stress on the buildings. However, 181 Fremont embodies an open, chevron-shaped midway about 500 feet up the tower to dissipate wind forces along the glass-walled amenity terrace. Due to the open nature of the amenity terrace, wide glass panels were required to achieve the prescribed level of wind deflection.

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