San Francisco Federal Building

About San Francisco Federal Building

The San Francisco Federal Building is an office building for the U.S. Federal Government. Designed as part of the General Services Administration’s Design Excellence Program, the project consists of an 18-story tower of reinforced concrete, a 4-story steel braced frame annex building, and a stand-alone pavilion for a restaurant.

To support the GSA’s commitment to incorporating energy efficiency and sustainability, the team proposed a design based largely on energy reduction through natural ventilation, taking advantage of the temperate Bay area climate. Exposed thermal mass was required to supplement the natural cooling, absorbing heat from computers, people and lighting. However, downturned concrete beams would have disrupted the airflow required to cool the slab, while also blocking light. A solution of upturned beams creates an unobstructed soffit across which air flows unimpeded, promoting heat transfer. The ribbed slabs that span between the upturned beams have a wave profile varying from 12-5/8 to 4-3/4 inches to reduce mass, increase air contact surface area, improve lighting by eliminating shadows and enhance the spaces aesthetically. At night, computer-controlled windows behind the scrim open, allowing the evening air to flow through the building and cool the concrete.

A narrow 20-meter (66-foot) floor plate allows for wind-driven natural ventilation. A thinned slab at the perimeter edge maximizes window height assisting with daylight penetration. The project’s tower building will consume 33% less energy compared to an office building design under the same California energy code.
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Videos

A Towering, Bold Statement About Government’s Relationship with its People and the Environment
30 May 2018 – Maria Ciprazo, General Services Administration; Eui-Sung Yi, Morphosis

Research Papers

The Use of Stainless Steel in Second-Skin Façades

CTBUH Awards

10 Year Award 2017 Award of Excellence
CTBUH Awards 2017

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