



PROJECT PROFILE

State Bar of California Building

Seismic Assessment and Strengthening | San Francisco, CA



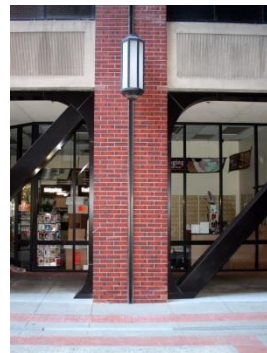
CLIENT

The State Bar of California

BACKGROUND

The earthquake-resisting system for this thirteen-story reinforced concrete structure consists of a stout perimeter frame permanently encased in precast concrete formwork and an interior minimally reinforced concrete core wall. The building was designed in the 1970s on the cusp of the era of modern earthquake engineering.

The structure's earthquake-resisting system includes deficiencies that in combination could lead to poor performance in the event of a major earthquake. The State Bar of California desired a creative solution to improve the performance of the building without severely disrupting operations by targeting and correcting the deficiencies and avoiding wholesale upgrading.



SOLUTION

WJE seismic engineers evaluated the structure to determine the capacity of the building to withstand earthquake ground shaking and developed schematic strengthening designs to mitigate the seismic vulnerabilities of the structure for the 475-year and the 2475-year design earthquakes. The engineers developed construction documents for a final design that employed state-of-the-art technology to improve building performance in the event of a major earthquake. The design limited disruption to a very narrow zone in a few bays at the perimeter of the building and only minimally impacted building tenants. The use of buckling-restrained braces in a seismic retrofit was the first application of its kind in San Francisco. The design passed peer review without modification of any structural details. The construction documents sufficiently articulated the design; only 4 percent of the guaranteed maximum price separated the high and low contract bid.

