



# FEMA

## *Police Department Seismic Retrofit Strengthening A Critical Facility*

**Seattle, WA** - Early in the 1990s, the City of Seattle, Washington, decided to do an overall survey to determine the weaknesses and integrity of several older buildings. One of the worst identified was a police station that had been built in 1926, and purchased as is by the city in 1985 with an appraisal value of \$2.3 million.

A project to strengthen and seismically retrofit the building began in August of 1995 and was completed in January of 1998. Capital Improvement funds paid for the approximate \$957,000 retrofit program.

Diagonal bracing was done on the east and north walls of the basement and the first and second floor. One major brace was run through the middle of the building while extra members were strategically placed throughout each floor. Certain walls were reinforced with fiberglass and epoxy. In the basement, micro piles were driven into the footings, and additional diagonal and vertical braces were installed to carry the load should the building rock. Steel angles connected the floors and walls.

A new emergency generator system was installed using bolted footings with springs that allow for earthquake movement without disruption of service. Many member supports added additional strength to the eight bays of trusses lined in a series across the roof. Windows throughout the building were covered with safety film. "This was a difficult job that took over a year to complete," Robert Snyder, City Architect and Engineer for the project said. "The police department remained active throughout the retrofit."

The southwest corner of the building had always been a weak spot. When a 6.8 magnitude earthquake struck the Puget Sound Region of western Washington, the integrity of that corner, which is also an exit stairway, was seriously compromised. Temporary steel braces were added to secure the walls, as well as vertical reinforcements bolted through from the outside.

After the earthquake, no one throughout the police department experienced even non-structural damage. "Some phone books fell over, and some file drawers came open," was all one secretary could report. There were a few cracks in the safety covered windows, that would have shattered had the film not been applied. On the roof, the scupper shifted, causing leakage though the seams and into the interior of the building. The City of Seattle had the foresight to retrofit, save people from serious injury and possible death, and save the historic and valuable 75-year-old building from total destruction.



**King County,  
Washington**



### **Quick Facts**

Sector:

**Public**

Cost:

**\$957,000.00 (Estimated)**

Primary Activity/Project:

**Retrofitting, Non-structural**

Primary Funding:

**Local Sources**