

RENOVATION AND REHABILITATION

Much of PSM's work includes the renovation and upgrade of existing facilities, extending the life of them, saving the owner money, and protecting our environment. Services range from repair of deteriorated structures, to reclamation and expansion of spaces with new framing schemes, to remediation of seismic damage, to repair of construction defects.

PARK 90/5 FACILITY SEISMIC REPAIR AND UPGRADE Seattle, Washington



This multibuilding complex was converted from former uses to important police and emergency functions. During design of the facility, a significant earthquake struck the Seattle area, which caused major damage to the facility. In addition to repair of the seismic damage, the



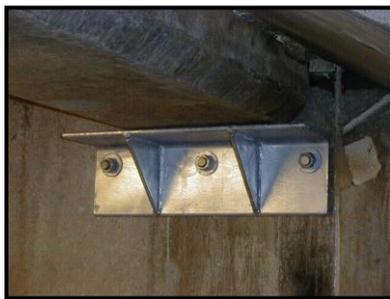
building was upgraded to resist future seismic events. Difficult geotechnical conditions (liquefiable soils) added to the complexity of this project. Additional structure (mezzanines) was added in the interior of the facility for new functions.

HIGHLINE COMMUNITY COLLEGE UTILITY TUNNEL RECONSTRUCTION Des Moines, Washington

When the Nisqually Earthquake damaged this important campus infrastructure link beyond repair, PSM provided structural engineering services critical to the success of this fast-track project, which restored a critical campus artery.



SEATTLE UNIVERSITY BROADWAY PARKING GARAGE REHABILITATION Seattle, Washington



This landmark structure on the northwest corner of the campus had suffered degradation from the elements and from heavy use in its 40 year life. PSM addressed multiple areas of concrete and steel deterioration for this precast, prestressed structure, enabling it to serve the University long into the future.

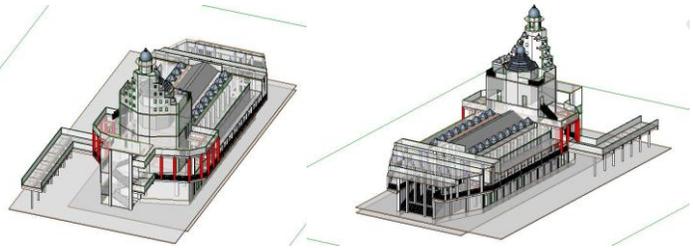


Renovation and Rehabilitation (continued)**HIGHLINE COMMUNITY COLLEGE PIER REHABILITATION
Des Moines, Washington**

PSM originally repaired earthquake damage to this valuable pier on Puget Sound, near Seattle. We then designed new facilities supported by the pier, which is used by a local college.

**BADRINARAYAN TEMPLE REHAB
Surat, Gujarat, India**

This concrete structure was heavily damaged in the 2001 Gujarat Earthquake. Subsequent water intrusion deteriorated structural elements. PSM provided repair details for damaged columns, beams and attached steel structures.

**SEATTLE HOUSING AUTHORITY
“HOMEWORKS” RENOVATIONS
Seattle, Washington**

This ongoing, three-phase project involves the upgrade of mechanical and architectural systems for 22 mid- and high-rise residential buildings in Seattle. PSM provided structural engineering support for these upgrades, which included new mechanical units and piping, in some locations new window installations, new elevators, and other items.

**ECKSTEIN MIDDLE SCHOOL
Seattle, Washington**

First designed by PSM in the 1940's, Eckstein has recently benefited from PSM's knowledge and experience in providing structural engineering for existing schools, when we provided upgrades to the roof diaphragm and other components.

PSM has worked with the Seattle School District for over 60 years. We were the lead firm for the District's first seismic review of their facilities, in the 1970's.



Renovation and Rehabilitation (continued)

UW POLICE FACILITY (BRYANT BUILDING)

Reroofing of this 60 year-old heavy timber waterfront building, (which houses the UW Police Department), had to be carefully designed to avoid extra dead loads. We also designed fall protection, a roof access catwalk, and repaired extensive wood rot damage in some locations.



CRISTA SCHOOL GRANDSTAND ROOF AND SEISMIC UPGRADE



PSM acted as prime consultant for this project, which included new catwalks and roofing. When defects from original construction were discovered in the steel moment frame supporting the grandstand, we also prepared repair drawings, and observed construction.



BOEING BUILDING 4-21 MEZZANINE DEMOLITION PROJECT Renton, Washington



As part of an overall project to demolish a large industrial mezzanine, PSM determined the effect on the seismic resistance of the remaining massive pile-



supported airplane assembly building, which was constructed in 1940. This included structural design of support structure for the remaining mezzanine. PSM also served as design team project manager, and lead for permitting with the City of Renton.

STRUCTURAL ENGINEERING FOR SOUTHWEST POOL MECHANICAL IMPROVEMENTS



PSM provided structural engineering for this project, which included new platforms and enclosures, fall protection, and new ductwork.

Renovation and Rehabilitation (continued)**MAGNUSON PARK BUILDING 2 STRUCTURAL CONDITION REVIEW AND ESTIMATE**

This recently completed (July 2010) study met the City's need for a rapid, focused structural and code review of this large, 80 year old structure. In addition to structural review, PSM included architectural life safety review and construction cost estimates. The Study has aided the Parks Department in planning for needed upgrades.

**TWIN CITY FOODS TRUSS REPAIR
Arlington, Washington**

The rehabilitation of this commercial freezer is typical of our renovation work for this market sector. As frequently happens in cold storage buildings, deterioration of the insulation system led to ice buildup, and melting of the ice caused water damaged to the wood framed trusses. We designed repairs for several different conditions, including rebuilding of truss components, and we also provided design for temporary shoring.

**MCKINSTRY HEADQUARTERS UPGRADE AND REVONVATION
Seattle, Washington**

PSM was asked to provide seismic upgrade, new mezzanines, a new elevator, and employee recreation facilities at this Company Headquarters, which is housed in a converted warehouse. The facilities include a gymnasium, golf driving range, and new office space for this progressive company.

