New Orenco Elementary School
Hillsboro, Oregon

Description: New mixed 1- and 2-story structure with classrooms, a library, and a gymnasium with column loads of up to 100 kips and braced frame footing loads of up to 700 kips.

Subsurface Conditions: Liquefiable soils were encountered to 50 feet below footing grade.

Design Details: The *Geopier*® soil reinforcement system, providing an allowable 5,000 psf design bearing pressure for spread footings, was selected as the most cost-effective alternative for support of the building columns and walls, as compared to 70-foot long auger-cast piles or a rigid mat foundation. *Geopier* soil reinforcement system was designed to provide minimum capacities of 90 kips per element. The 28-foot long piers provided mitigation of liquefaction potential in the upper 30 feet of the soil profile in zones beneath the footings. The owner determined that liquefaction-induced settlements that might occur below the depth of *Geopier* soil reinforcement, as estimated by the project geotechnical engineer, would be within acceptable limits. A total of 274, 30-inch diameter *Geopier* elements were installed in only 13 working days at the site.

Geopier Licensee: Geopier Foundation Company - West

General Contractor: Lease Crutcher Lewis Contractors

Owner: Hillsboro School District

Geotechnical Engineer: David J. Newton & Associates

Structural Engineer: KPFF Consulting Engineers