PROJECT DESCRIPTION

PROJECT: Wrap Apartments and Parking Structure

LOCATION: Orenco, OR

DESIGN TEAM:

Architect:	LRS Architects : Portland, OR
Structural Engineer:	Nishkian Dean (Parking Structure) : Portland, OR
	Froelich Engineers (Apartments) : Portland, OR
Geotechnical Engineer:	Terra Associates : Kirkland, WA

CONTRACTOR: *Holland Construction, Inc.* : Vancouver, WA

DETAILS:

- 5-level concrete parking structure for 365 automobiles
- 4-story apartment buildings (364 units) wrap around and connect to the parking structure
- column loads of 250 kips to > 1000 kips
- Willamette SILT Formation
- Groundwater at 15'-20' during dry season; higher during wet season
- Allowable bearing pressure on pier-reinforced soil = **7000** psf

On this 4½ acre site, GTFC-W provided complete design of the aggregate pier system and then constructed over 1200 aggregate piers for foundation support. Footing excavation and concrete pours followed immediately behind the pier installation as GTFC-W progressed from building to building.

The GTFC-W proprietary Quality Control instrumentation was used during pier ramming to confirm that the modulus achieved on the aggregate lifts as they were constructed met or exceeded the design modulus. Pier construction achieved the GTFC-W goal of essentially Six Sigma Quality Control.

REFERENCES:

Tony Piscitello, Sr. Project Manager Holland Partner Group	Carolyn Decker, Project Engineer Terra Associates
Bob Kantola, Project Superintendent Holland Construction, Inc.	Chris Nelson, PE Froelich Consulting Engineers