

Creating a Neighborhood Icon

by Jeff Parker, David Evans and Associates Inc.

The Franklin Avenue neighborhood in Astoria, Ore., is returning to the ocean at a rate of ¼ in. per year. The landslide is perpendicular to the old Franklin Avenue Bridge alignment. Constructed of timber in 1949 with an expected life span of 50 years, the bridge was marching down the hill with the rest of the neighborhood. It was due for replacement.

The new bridge is a two-span, 180-ft-long concrete structure with a decorative railing that retains the character and aesthetic charm consistent with the appearance of the historic neighborhood. The bridge features drilled shaft foundations, cast-in-place concrete columns and abutments, precast, prestressed concrete deck bulb-tee beams, and soldier piles. The approach fills use retaining walls with cast-in-place concrete fascias. Perhaps most important, the bridge incorporates 42-in.-high rails and sidewalks being used twice daily by the neighborhood's schoolchildren.

This project offered several unique challenges brought about primarily by the historic significance of the community, the limited access to the job-site, the continual movement of the soil, and the requirement for uninterrupted access to the 50 home sites within the project boundary.

The contractor erected the bridge in stages, completing one-half of the bridge at a time. This allowed continuous access for property owners, kept construction operations within the limits of the existing right-of-way, and mitigated concerns and possible damage to several historic homes located close to the project.

The bridge design incorporated techniques to account for continual ground movement. A 30-in. hole was opened around the bridge columns, on the uphill side of the landslide, and filled with bentonite-modified soil. As the earth moves, these holes start to collapse toward the columns, but the bentonite flows around the columns without placing a lateral load on them.

Astoria is the oldest U.S. settlement west of the Rocky Mountains. The bridge-design detail complements the historic neighborhood. The design was subject to the approval of the Historic Landmarks Commission, which ultimately presented the city with an award for the design.

The bridge lies just yards away from several homes; noisy, messy work was performed right outside people's bedroom windows. Given the



The two-span bridge has a decorative railing consistent with the appearance of the historic neighborhood. All photos: David Evans and Associates Inc.

constrained construction area, frequent communication with the surrounding neighborhoods and understanding their requirements were keys to success. In fact, on one of the two days that the bridge was closed for the beam placements, our construction project manager carried groceries for people living on the dead-end street. The residents were incredibly patient. At the end of the project, about 150 people attended a barbecue held on the bridge to thank the residents. 

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