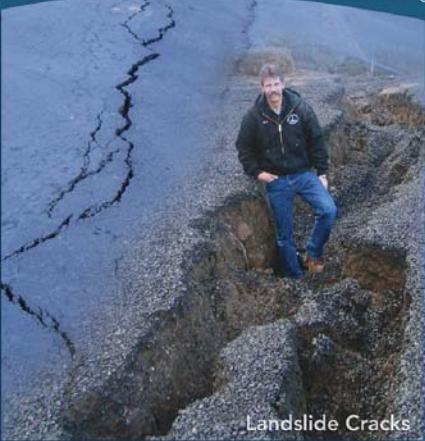


SCHOONER LANDING RESORT NEWPORT, OREGON

Crack Problems Down the Drain

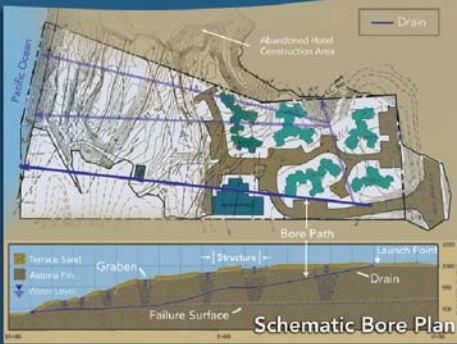
Challenge: Stabilization of coastal landslides by drainage can be problematic due to low-permeability earth materials.
Solution: Intercept high-permeability graben features and landslide-induced cracks with deep drains exiting onto the beach.



Landslide Cracks



Directional Drill



Schematic Bore Plan



Drain Pipe



Drill Emerging at Beach



12" Diameter Packer / Reamer

Innovative Method and Approach:

Directional drill methods were successfully adapted to horizontal drain installation. The launch point for each drain was from the "top" of the site and toward the beach, rather than from a traditional starting point at the "bottom" upward. PBS installed drains consisting of perforated, high-strength, HDPE pipe. The drains were installed perpendicular to the grabens and cracks of the landslide formation. Directional drill techniques allowed the drains to be precisely located at just below the landslide failure surface in the more active portions of the landslide, minimizing the potential for future damage. The "top" launch site minimizes impacts to the beach environment and provides easy access for installation and future maintenance.

PBS
Engineering + Environmental

4412 SW Corbett Ave.
Portland, OR 97239

Contractor:
TBH & Associates
Vancouver, WA

Client:
Schooner Landing
201 NW 66th Drive
Newport, OR 97365

ACEC
AMERICAN COUNCIL OF ENGINEERING COMPANIES