

Creating Buildable Land

by Ted von Rosenvinge, PE

Today, more creative approaches are being used to develop land. Many of the prime or easy sites have already been built upon. Some of the attractive locations available for new development or expansions are on hillsides. Traditionally this meant extensive excavation of a portion of a hill and construction and backfill of a conventional retaining wall to hold back the remaining slope.

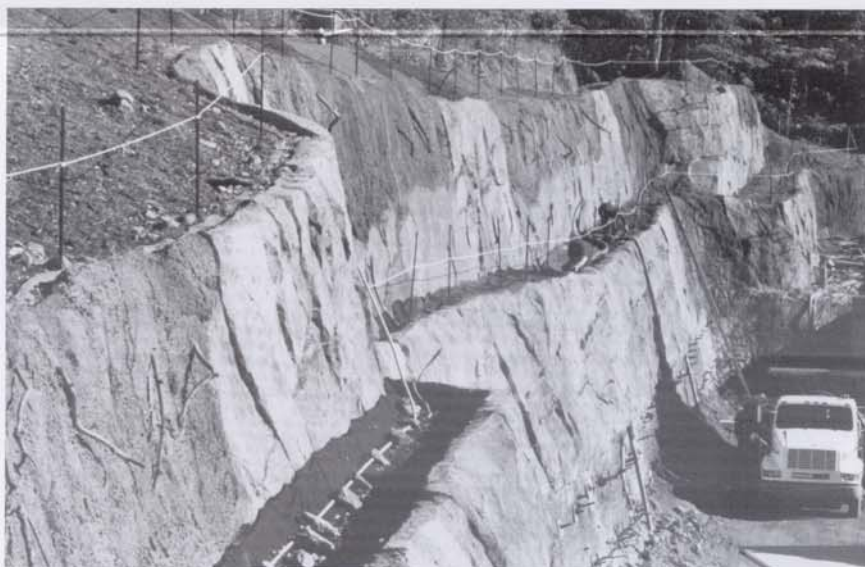
A newer, more cost effective solution to the problem is soil nailing. This method is gaining popularity for use on a variety of projects, including major highways and commercial and large residential developments. Soil nailing is particularly suited to areas of the country where the soil is relatively competent, as is frequently found in upland areas in the Northeast.

Instead of a large excavation to build a conventional retaining wall (cantilever and gravity walls) or permanent sheeting systems, the earth is held in place

with a pattern of horizontal soil nails and a reinforced shotcrete face. This system is installed incrementally from the top down with minimal excavation. The earth itself essentially becomes part of the retaining structure. Attractive aesthetic finishes, from an architectural to

a natural geologic appearance, can then be applied to the shotcrete face.

The result is reduced excavation costs, minimal threat to adjacent property, and an attractive appearance. This and other technologies are available for dealing with steep sites. ■



Residential Development –Southwestern Connecticut

GeoDesign is the geotechnical engineer for this 40-ft. high soil nail wall with natural geologic finish. When completed, terraced areas will contain plantings, and exposed soil nails and unfinished shotcrete shown at the base of the wall will be covered.