

Case Study

application	Steepened Slope
location	Home Depot, Statesville, NC
product	Miragrid® 3XT, 5XT, & 8XT

job owner	Home Depot
engineer	Thomas Rainey, P.E.
contractor	Earth Structures

TenCate™ develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

THE CHALLENGE

To maximize the use of the available property line adjacent to a streambed. The site chosen by Home Depot for their newest facility in Statesville, NC has a highway egress elevation approximately 18 meters (60 ft) above the streambed at the back of the property. In order to maximize the use of the property and to enhance the available parking area vs. building size ration, a 1/2 to 1 reinforced steepened slope 11 meters (36 ft) tall was constructed adjacent to the streambed.

THE DESIGN

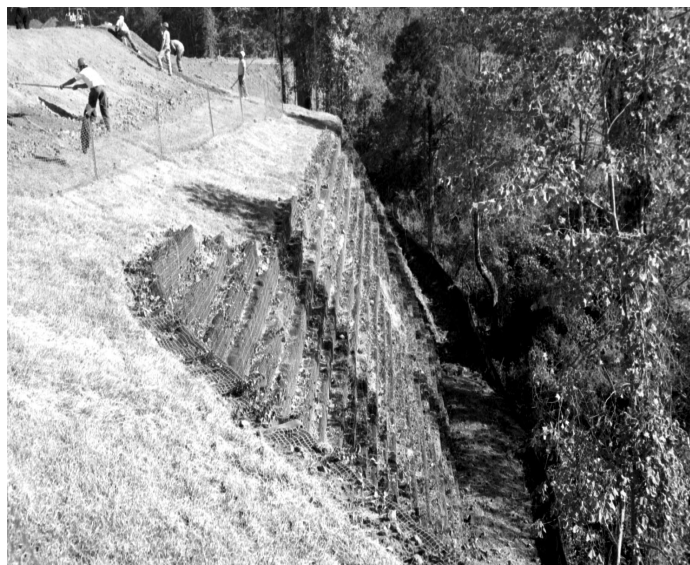
The original site design called for a 1/5 to 1 reinforced slope with a cast-in-place concrete wall at the top of the slope. During early negotiations, Earth Structures, Inc. in conjuc-

tion with Thomas Rainey, P.E presented a Value Engineered option of a steeper reinforced slope (0.5 to 1) with a traditional 2 to 1 vegetated slope at the top, which would save money and provide additional property usage. The new design was a 1/2 to 1, 11 meter (36 ft) high reinforced soil slope incorporating Miragrid® 3XT, 5XT and 8XT for geogrid reinforcement with the maximum anchor length of 11 meters (36 ft), used in a wrapped face system with 90 degree wire basket forms and an erosion control matting to create the face. Additionally, to protect from potential water problems, 10 cm (4 in) perforated plastic pipe was installed perpendicular to the slope face, penetrating the wire forms to provide positive drainage in the reinforced zone.

THE CONSTRUCTION

The reinforced structure is 11 meters (36 ft) high, 180 meters (600 ft) long with a maximum of 1500 sq. meters (16,000 sq ft) of vertical face. The construction of the slope was completed in 28 days, well within the project's strict

deadlines. In addition to Earth Structures' two (2) D-5 dozers and 84" compactor, the onsite grading contractor, Hoffman Grading, provided additional dozers and compaction equipment, which allowed the placement and compaction of over 400 cubic meters (1,500 cubic yds) of fill dirt per day. Miragrid® geogrids were installed at 45 cm (18 in) vertical spacing with a 1.2 meters (4 ft) tail draped over the front on the wire form, soil compacted, then the tail wrapped back over the fill. A standard 1 meter (139 in) width of Enkamat 7210, a flat back three dimensional permanent erosion geomat, was installed behind the Miragrid® geogrids at the wire basket face, to retain the soil at the face and provide long term erosion protection. To soften the visual effect of the 11 meter (36 ft) tall slope, over 4000 ivy plants were installed on the slope through the Miragrid® Enkamat face.



THE PERFORMANCE

The slope has been in place since late September 2000 and is functioning well. Both the General Contractor and the owner are pleased with the finished product and the amount of time for completion of the project. The vegetation is starting to establish and the 2 to 1 slope above the reinforced steepened slope has been sodded.



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