

Fokke SAATHOFF

Dr.-Ing., BBG Bauberatung Geokunststoffe Lemfoerde, Germany, E-mail: go@bbg-lf.de

Jörg KLOMPIKER

Dipl.-Ing., BBG Bauberatung Geokunststoffe Lemfoerde, Germany, E-mail: go@bbg-lf.de

## PLANNING AND REALISATION OF TWO GEOSYNTHETIC-REINFORCED RETAINING WALLS

This paper will deal with the planning, the design and the realisation of two geosynthetic reinforced retaining walls.

In Marbella / Spain a privately used complex of buildings, consisting of three residential buildings with access roads, gardens and leisure parks is planned to be built on a land area of approximately 10,000 m<sup>2</sup>. For the construction of even and multilevel constructible areas in the natural slope area, fills and collateral geotechnical stabilisation measures are necessary.



Under utilisation of the maximum land area, geosynthetic reinforced retaining walls have been built since the year 2002. Important parameters for this project as well as decisive geosynthetic requirements will be presented.

Under utilisation of the maximum land area, geosynthetic reinforced retaining walls have been built since the year 2002. Important parameters for this project as well as decisive geosynthetic requirements will be presented.

(First publication dealing with this project:

"Saathoff/Werth/Vollmert/Klompiker/Wittemöller at EuroGeo 2004, Munich March 2004).

To sustain a large population of old trees a geosynthetic reinforced slope was built adjacent to the historical Old Town of Idstein (near Frankfurt / Germany) in the year 2001. Using a longitudinal inclination of 12 % an altitude difference of 20 m was achieved over a length of approx. 160 m. The maximum inclination of the slope was 60° and the average height of the slope 5.50 m.



A greenable steel grid cladding was chosen for the composition of the facing. Between the soil and the steel grid cladding a green dyed separation and filter nonwoven was laid, which prevented erosion of the soil and which provided an acceptable facing in the transition period until an overall vegetated situation is reached. Flatter slope inclinations were built using a construction of berms, which at the same time prevented surface water running off too quickly. Horizontally installed geogrids secure the slope. Compared to the angular retaining wall, which was considered in the preliminary planning, the final solution was 50 % cheaper.

A greenable steel grid cladding was chosen for the composition of the facing. Between the soil and the steel grid cladding a green dyed separation and filter nonwoven was laid, which prevented erosion of the soil and which provided an acceptable facing in the transition period until an overall vegetated situation is reached. Flatter slope inclinations were built using a construction of berms, which at the same time prevented surface water running off too quickly. Horizontally installed geogrids secure the slope. Compared to the angular retaining wall, which was considered in the preliminary planning, the final solution was 50 % cheaper.

(Until now publications dealing with this project available in German only)

