

## A1 WESTERN MOTORWAY, SLOPE PROTECTION

Client: Provincial Government of Niederösterreich

Development Period: 2002 / 2003

### THE PROJECT

After the widening of the Western Motorway (A1) from a double two-lane to a double three-lane motorway, several slope instabilities occurred between Amstetten and St. Valentin. Erosion trenches were formed, top soil was slipping down and deeper reaching soil bodies were sliding.

The geotechnical expert was consulted to provide a concept plan for the reconstruction of the affected slopes and other areas at risk of instabilities.

### OUR FUNCTION

BGG was commissioned as a soil consultant after the occurrences of the damage. Detailed geological and photographic surveys were carried out in order to record slope edges, crevasses, sliding bodies and water logging areas.

Based on the results of these surveys, the causes and mechanisms of the slides were determined.

Depending on the particular mechanism of failure, well-directed measures were determined in order to remedy and reinforce the affected sites.

#### *Oed motorway exit:*

Subsequently, the area near the Oed motorway exit is described as an example.

In this area, at the slopes of both sides of the motorway, numerous deep reaching, shell-shaped slides occurred at an extent of 500 m. Each one featured a length of up to 40 m, depths of up to 5 m below the original slope line, as well as baggings of up to 4 m. Furthermore, breaking of the grass sward was observed in wide areas.

Depending on the size and cause of the slides, BGG designed the appropriate reconstruction plans of the areas, which was then executed accordingly.

Reconstruction included the use of rock support bodies (stone walls, slope paving), 3-dimensional slope mesh (anchored) and coconut fibre mats.

*Images of the A1 Western Motorway, side towards Vienna, at 131.7 km*



*Sliding Situation*



*Reconstruction*