Engineering Structures for Life

ENVIRONMENT - WATER

Mira agricultural irrigation channel

ABOUT

The project included several geotechnical interventions along 40 km of an agricultural irrigation waterway, constructed over 35 years ago, which had been previously submitted to a complete waterproofing intervention.

As a consequence of the severe weather conditions in the years of 2000 and 2001, several slides and rock falls occurred along 31 different cutting slopes located above the waterway's reinforced concrete lining, with a total extension of 4.000 km. Most of the applied solutions were based either on wire mesh protection systems against rock fall combined with soil nails or by means of rigid steel barriers. Drainage systems were also implemented.

Besides the slopes above the waterway, there were several geotechnical problems in the adjacent embankments and parallel road accesses. In some sections, the creation of undesired water courses behind the lining and threw the embankments had eroded and even washed away important portions of embankments, cutting the road access, and leaving the lining completely unprotected.

FACTS

Year: 2001
Client: Tecnasol - FGE
Services: Detailed design, Geotechnical Engineering, Geological and geotechnical studies, Irrigation systems and perimeters (hydro-agricultural)

TEAM

António Campos e Matos
Sérgio Cunha

LOCATION

Beja, Portugal

The solutions were mainly based on the reconstruction and reinforcement of the embankments, by means of layers of selected soils and filled geocells. The aim was to establish a stable and strengthened block on the base of the embankments in order to avoid future geotechnical pathologies which could cause settlements, cracks, and other damages to the roadway pavement.

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