

## THE RESULTS OF SLOPE STABILIZATION WORKS AT THE KARTALTEPE STATION OF ISTANBUL LIGHT RAPID TRANSIT SYSTEM (LRTS)

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### Abstract

Slope stabilization works of Istanbul LRTS Kartaltepe station are projected and practised by Forestry Faculty of Istanbul University in 1988.

Practise principles of project are explained and as to evaluation six years later from works, results are positive in general.

### SUMMARY

Kartaltepe LRTS station is located in Bayrampaşa district of Istanbul province in northwestern Turkey (Map 1). Station area has been obtained by excavation of Kartaltepe hill (85 m) in depths of 0-25 metres (Figure 1). Erosion control works on the excavated slopes that were projected and practised by Forestry Faculty of Istanbul University have been completed in 1988. The situation has been evaluated at the end of six years from that time.

Vegetation and top soil have been removed during excavations and the parent material -in the form of alternating sand and marl- has been exposed in Kartaltepe. As a result, surface and gully erosion have come forth.

Works were classified in two groups: erosion control and revegetation. Control works were started with wattle fences in gullies (Figure 2). After the installation of wattle fences, gullies have been covered by soil (Figure 2). Then land has been graded roughly and for surface stabilization, wattle fences have been installed on the slopes using species such as willow and poplar which will root easily (Figure 3).

Six years later from the completion of works, wattle fences, poplars and willows -which have developed from wattle fences- and ground covers have controlled the erosion.

Ninety per cent of the plantation have left the area because of the negligence of irrigation, protection and maintenance.

The ratios of some existing plants to total plants are: broom (*Spartium junceum*) 34 %, locust acacia (*Robinia pseudoacacia*) 18 %, poplar (*Populus nigra*) 11 %, willow (*Salix cinerea* and *S. viminalis*) 12 % (Table I). Ground covers (*Melilotus sp.*, *Onobrychis sativa* and *Vicia crac-*

*ca*) are succesful but grass has left the area. Locust acacia, broom, wild indigo (*Amorpha fruticosa*) that form 57 % of the existing plants and ground covers are species of the *Leguminosae* family. Another family that is represented by poplar and willow is *Salicaceae* and forms 23 % of the existing plants.

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