



Encouraging roots to maximise their soil reinforcement potential

J.E. Norris and J.R. Greenwood

School of Built Environment, Nottingham Trent University, Burton Street, Nottingham, UK,
NG1 4BU (joanne.norris@ntu.ac.uk / Fax: +44 115 8486450 / Phone: +44 115 8482491)

It is widely accepted that plant roots contribute to the reinforcement of soil, particularly at shallow depths where plants are used to prevent soil erosion. The larger diameter roots that form the major structural components of the root system have been shown to be sufficiently long enough to interact with potential shallow slope failure planes at depths of 1-2 m, and thus contribute to the tensile reinforcement element in slope stability analysis. The authors recent work in connection with the EU funded ECOSLOPES project (www.ecoslopes.com) has established a database of plants that can assist with stabilising the soil. Vegetation in its nature is unpredictable and root networks vary both intra and inter species due to variations in soil moisture, nutrients and environmental conditions. Most vegetation types are controlled by the seasons resulting in growth and dieback at different times of the year. This work reviews the investigation, preparation, planting and maintenance regimes that should be developed to maximise the reinforcement potential of the roots over a period of time.