

GEOTECHNICAL ISSUES REGARDING THE CONCEPT OF MARGINAL STABILIZATION IN CASE OF LANDSLIDE

Anghel STANCIU¹, Irina LUNGU², Nicolae BOȚI³, Jenel COPILĂU⁴

Rezumat. Alunecările de teren sunt abordate în prezent, în sens anticipativ, printr-o analiză de stabilitate în condițiile unor noi construcții în zone potențial alunecătoare sau prin intervențiile necesare post-eveniment, pentru a reda construcțiilor avariate funcțiunea temporar anulată de instabilitate. Post-eveniment, deși alunecarea induce o temporară stabilizare prin deplasarea neregulată a maselor de pământ în zona aval, reabilitarea construcțiilor afectate, implică reconfigurarea zonelor de rambleu/debleu, lucrări de sprijinire însoțite de drenaje într-o abordare unitară, cu scopul de a crea o stabilitate dirijată pe zone de interes. Conceptul de stabilizare marginală prezentat în lucrare implică atât evaluări de parametri geotehnici prin calcul invers, cât și elemente de dimensionare a lucrărilor geotehnice la acțiuni ale masivului de pământ identificate în urma reconfigurării geometrice, cerută de redarea în circuitul social/economic al construcției avariate.

Abstract. Landslides are presently approached as predictive processes, by slope stability analyses when building new constructions in zones prone to landsliding or through post-event interventions, to restore the temporary malfunction of the construction affected by the soil instability. Although sliding itself as post-event effect induces a temporary stabilization by random movement of the soil masses down the slope, rehabilitation of the affected constructions, involves retrofitting of the man/made slopes, retaining structures accompanied by drainage works in a unitary approach, to create intended stability on the zones of interest. The concept of marginal stabilization presented in this paper involves both evaluations of the geotechnical parameters by back calculations and the sizing of the geotechnical works for soil loads identified by the geometrical repointing, required by the damaged construction retrofit into the social/economical circuit.

Keywords: landslide, slope rehabilitation, marginal stabilization, shear strength, landslide risk

1. Slope rehabilitation – general principles

It is necessary to provide the answer for two major questions in particular, to establish the slope rehabilitation measures and reduce the landslide risk [2]:

- a. What are the causes that triggered or are about to trigger the soil instability?
- b. What are the rehabilitation measures that will ensure the zone stability in predictable future conditions?

¹Prof. Ph.D., Faculty of Civil Engineering and Building Services, Technical University “Gh. Asachi”, Iași, Romania, member of the Academy of Romanian Scientists (anghel.stanciu@yahoo.com).

²Assoc. Prof. Ph.D., Faculty of Civil Engineering and Building Services, Technical University “Gheorghe Asachi”, from Iași, Romania, (ilungu@ce.tuiasi.ro).

³Prof. Ph. D., Faculty of Civil Engineering and Building Services, Technical University “Gh. Asachi”, from Iași, Romania, member of the Academy of Romanian Scientists (nicolae.boti@yahoo.com)

⁴Ph. D. Eng. S.C. COPER S.R.L. Slatina, Romania, (jenelcopilau@yahoo.com).
