

## **Creation of a New Hydro-Mechanical Laboratory**

Scientific-educational laboratory provided with scientific equipment, visual means, will allow us to conduct theoretical, practical and laboratory works for bachelors, masters and doctoral students to prepare for the following directions: „construction", energy, hydraulic structures, water supply for buildings and enterprises, drainage system and ecology.

The scientific-eaboratory laboratory is intended for scientific purposes, experimental and theoretical researches of current issues of security and modern river and urban hydro technique security, particularly for studying and solving following tasks:

1. Engineering-melioration assessment of soils for various regions of Georgia;
2. Change of agricultural landscape structure;
3. Forecasting the risk of disruption of hydraulic structures;
4. Evaluation of soil degradation processes on mountain slopes;
5. Establishment of ecological characteristics of the main rivers in the Black Sea;
6. Study of physical-mechanical characteristics of floods and mudflows and investigation of dynamics of their forms;
7. Assessment of the reservoirs and dams;
8. Analysis of efficiency of coast protection, wave resistance and slope sustainability for abrasive parts of water reservoir.

Taking into account the importance of the tasks, the Technical University of Georgia has acquired the modern, latest hydraulic and hydrogeological laboratory with a wide range of appropriate equipment

The laboratory equipment contains a wide range of tools and models, such as water retention and transmission, and demonstration channel for studying the development of the sedimentary processes. These modules provide the opportunity to conduct fundamental

research in the field of civil engineering, helping to study the specifics of construction of dam, damping, energy-generating structures.

The Rain Water Sediment Hydrograph is a device for studying groundwater, which conducts hydrological principles of groundwater flow and their use in relation to some engineering structures related to water resources. In addition, the set contains a non-sustainable bed and flow imaging module - drainage and filtration bags, - apparatus studying sediment formation. The entire spectrum of this equipment makes a laboratory the modern center of the region for hydrological and hydraulic surveys.

This lab greatly simplifies the learning process with its visuality. Scientists will use the results of research to create mathematical models of physical processes, designing water reservoirs, hydraulic structures, etc.

At present, the total cost of equipment (5,0 million euro) has been obtained and all necessary installations are acquired. Project of the laboratory building is completed, the laboratory will be built in the yard of the first building of the Georgian Technical University.

Mikheil Janikashvili