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Training of geotechnical engineers in Albania

Formation des ingénieurs en géotechnique en Albanie

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Abstract

The last 10-15 years, in Albania were evidenced many dangerous phenomena's on construction practice, which are tied with geotechnical problems. The absence of the specialized institutes and the total privatization of construction sector, have done the necessary to train and specialize the civil engineers in geotechnical field. In this paper we want to present our experience for the training of the civil engineers, their profits and advantages. Also we would like to present the work that is done in the Civil Engineering Faculty for preparation of geotechnical engineers, capable of doing design of geotechnical structures, to resolve difficult geotechnical problems and to realize all kind of geotechnical works.

Résumé

Les derniers 10-15 ans, en Albanie en témoignent de nombreux phénomènes dangereux sur les pratiques de construction, qui sont liés à des problèmes géotechniques. L'absence d'instituts spécialisés et de la privatisation totale du secteur de la construction, ont fait le nécessaire pour former et de spécialiser les ingénieurs civils dans le domaine géotechnique. Dans ce papier, nous voulons présenter notre expérience de la formation des ingénieurs civils, de leurs bénéfices et avantages. Aussi nous tenons à présenter le travail qui est fait dans la Faculté de génie civil pour la préparation de la géotechnique ingénieurs, capables de faire la conception des ouvrages géotechniques, afin de résoudre des problèmes géotechniques et de réaliser toutes sortes de travaux géotechniques.

Keywords: Geotechnical Engineers, Training,

1 INTRODUCTION

During the transitory period in Albania, was made the total privatization of construction sector. Very big development was seen in some sectors as:

- construction of multi stories buildings with 1-5 underground floors;
- constructions of national and rural roads and highways; construction of bridges, subways and tunnels;
- construction of airports, reconstruction and enlargement of ports;
- construction of watering system and maintenance of over 600 dams constructed before, for hydropower plants and irrigation.

Albania is mountain country (75% of territory are hills and mountains), 50% of field zone is marsh with high seismicity. Albania has many water sources and torrential rivers. The big development of construction is accompanied with dangerous phenomena's as:

- all kind of slope instability;
- very big deformation of soils;
- damage of existing buildings because of the deep excavation near them;
- vigorous erosion activity of rivers;
- the destruction of the environmental equilibrium from the construction without criterion in the hill zones ect.

These problems have evidenced the necessity to acquire knowledge in the geotechnical field and deepening in the geotechnical studies. It is with no doubt that the Geotechnical Department, AGS and the cooperation between academics and practitioners has the main role in the professional education.

2 THE ACTIVITY OF THE GEOTECHNICAL DEPARTMENT.

The Geotechnical Department of the Polytechnic University was developed good education, scientific and practice activity and it has a close collaboration with AGS. During 40 years of its life it begun with two disciplines:

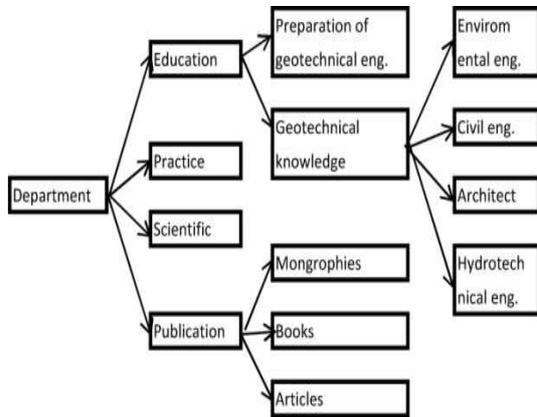
Soil Mechanics and Foundations, and now it has eight more disciplines which are made in the second cycle of Bologna process. They are:

- Rock Mechanics;
- Experimental Geotechnics;
- Road Geotechnics;
- Slope stability and design of dams, embankment, tilling dams;
- Soil dynamics and foundation under vibration;
- The geotechnical codes;
- Deep foundations;
- The security problems of geotechnical structures.

The Geotechnical Department has made over 30 publications and books which serve for students and civil engineers. Every year the department's member lead 20-22 students in diploma work with the design of geotechnical structures, scientific themes and to do them in practice. Already it is create a good stock with the works of young geotechnical engineers. In the Geotechnical Department the work continuous for the qualification of their members. So, till now, was finished 6 Ph.D. thesis, one thesis for Doctor in Philosophy, many master's thesis and the evaluation for other 10 Ph.D. thesis ect.

Now we have the third cycle of education or Doctorate School which will prepare every year 2-3 Ph.D. thesis.

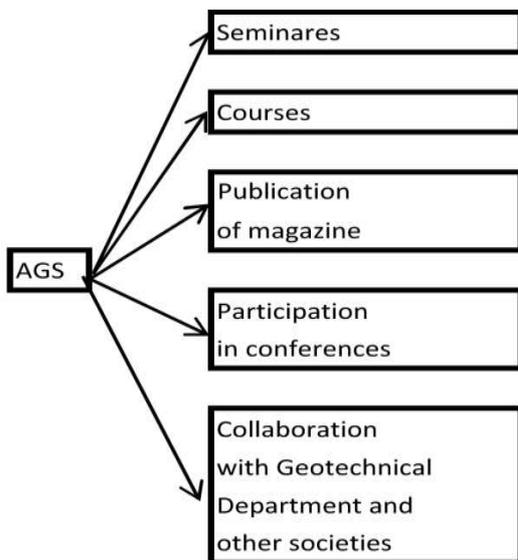
All scientific problems which are planned and are realized by Geotechnical Department are from engineering practice. The department has very close relation with practice, making the consuler, the survey, the difficult geotechnical design, the common project ect. In the same time the department keeps connections with their colleges from Europe, America, Asia and Africa. All activity of Geotechnical Department can be expressed by the following schema:



The biggest success of the Geotechnical Department is the opening for the first time in Albania of the geotechnical specialty in Civil Engineering Faculty. The first specialists in this field graduate in 2010.

3 THE ACTIVITY OF THE ALBANIAN GEOTECHNICAL SOCIETY AGS.

AGS is a new society. It was created in 2000 and during 9 years it had good activity in the field of geotechnical education of the civil engineers and geologist. Their activity is presented by the following schema:



So, AGS has made: three international activities with ENPC, workshop with professors from USA and Greece, Touring lectures in collaboration with ISSMGE. Also it made 5 training courses and 2 seminars with civil engineers. AGS has published annual magazines for 9 years. Each magazine has: research rubric;

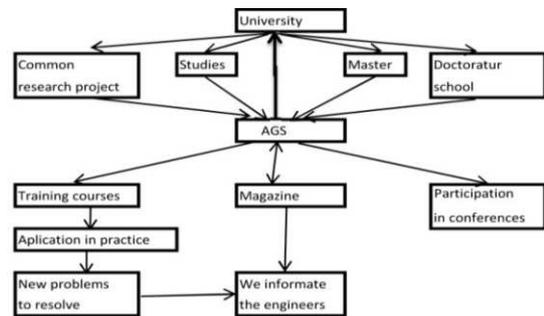
result of practical problems;

researches of young geotechnical engineers and different information ect. Since 2001 every year members from AGS have participated with their papers in international conferences, symposiums and workshops. This participation has made possible the exchange the experiences. The new theories, technologies, are published by AGS magazines. AGS organizes common activity with Civil Engineering Faculty and with different private companies.

Collaboration between academics and practitioners. Every good result in geotechnical studies by:

- experimental studies;
- master's thesis;
- Ph.D. thesis;

common research project between universities, are made effective by cooperation academics and practitioners. This collaboration functions by the following schema:



So the cooperation between academics and practitioners is realized by AGS, which takes from the academics all the new information and transmits this to the practitioners and takes from practitioners the problems that need solution and transmits them to the academics. In this manner are developed all studies in the geotechnical field.

The profile of the geotechnical engineer. Already in Albania is prepared the geotechnical engineer (by Bologna system). In the second cycle of this system the student in the geotechnical profile is prepared and specialized in theoretical and practical field. They learn all problems that are tied with EC-7, EC-8. Also the students learn all kind of foundations, geotechnical structures, dams, embankment, slope instability and engineering measures to stabilize them, different improvement methods ect. The start of the third cycle of Doctor's school will have a huge importance in the development of scientific and research work in geotechnical field.

4 CONCLUSIONS.

- The AGS has a big role in:
- Collaboration between academics and practitioners.
- Training of civil engineers.
- Promotes the studies of the young engineers and other studies.
- Evince the most important geotechnical problems in Albania to sensibility the public opinion.
- Propagation of a new technology and methods in geotechnical works.

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