

New Talents Necessary for Geotechnical Consultation Industry and Expectations to Science Education

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Great East Japan Earthquake happened in March, 2011 led to legislation of "Basic Act for National Resilience Contributing to Preventing and Mitigating Disasters for Developing Resilience in the Lives of the Citizenry" in 2013, and recent frequent occurrence of major natural disasters, such as 2014 Hiroshima Landslides and 2014 Mount Ontake Eruption, is now attracting unexampled rise of people's attention to our land.

Geotechnical consultants have been regarded as their main business to provide basic information of the ground for construction of social infrastructures that supported rapid growth of Japanese economy. However, due to the change in people's attitudes toward the ground, geotechnical consultants are now expected to provide solutions for balancing natural environments and human societies, such as, prevention and mitigation of natural disasters and elucidations of the ground environments. As exemplified in a project that examines effects of forests in disaster prevention from a viewpoint of the distribution of geology and vegetation (Ikegami, et al., 2015) and another project that proposes a timed countermeasures against sediment disasters triggered by a heavy rainfall (Ohmura, et al., 2015), our services are expanding from traditional engineering services based on geology to provision of solutions through combination with other engineering techniques and integration with information technologies, and there is an emerging tendency in which new business opportunities take place.

On the other hand, due to increased interest in the ground at a national level and a development of information technologies, geotechnical consultation, which has been providing information to business operators, are now turning into a position where we directly respond to people's needs, for example, supply of easy-understanding ground information using three dimensional modeling (Nishiyama, 2015).

These changes in industry, of course, lead to a change of expected talents in the industry. Such talents include ability to logically derive solutions from broader natural scientific perspectives beyond his/her specialty, and have to have a capability of hypothesis testing too.

Fieldwork-oriented-education like geological reconnaissance is recommended to grow such talents, and expanded application of fieldworks into geoscientific university educations is being awaited. From a different perspective, as an industry with a mission to build safe & secure societies and to contribute to national resilience, we regard it important to further improve people's levels of knowledge regarding natural sciences. Therefore, we have been working as the whole industry on school education activities that principally involve fieldworks. However, activities driven by an industry have a natural limit. We should look to science education at school to play this role. As a level to be achieved in the education, it is important to target the knowledge formation that enables people to participate preventing and mitigating activities for natural disasters.

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