November 8th, 2017, Number 26

ICUS Online News

International Center for Urban Safety Engineering, Institute of Industrial Science, The University of Tokyo

Retiring from the Works of PWRI

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Since the year 2010, I have been working as the president of Public Works Research Institute (PWRI). This March, 2017, I retired from the institute and now working as an adviser to several companies and organizations.

During my stay in the institute, a lot of natural hazards occurred elsewhere not only in Japan but also in other parts of the world. The institute has been serving as the center of civil engineering under the Ministry of Land, Infrastructure, Transportation and Tourism (MLIT) on these occasions.

One of the most shocking disaster was the Great East Japan Earthquake which occurred on March 11, 2011, at 14:46. It happened when I started working in PWRI about one year. A huge earthquake of magnitude 9.0 occurred at Pacific Ocean off Sanriku coast and strong ground motions were widely observed from Hokkaido to Kanto region. Furthermore, great tsunami hit the east coastal lines of the Tohoku and Kanto region just after the earthquake. The inundated height of tsunami and tsunami run-up height was about 40m. As the result, about 10% of land was inundated and more than 100 thousand buildings were destroyed.

As a research institute of civil engineering, I have to send many researchers immediately to give engineering advices to the local government and the people. The researchers have checked the validities of the seismic design of the structures, but the consideration against tsunami force was not enough in many cases. After the disaster, we have been studying how to deal with the problems of tsunami and developed several measures to deal with the problems.

Similar disasters have been happening in other parts of the country. The problem is that even when we use the newest technologies, such as seismic design, recent disasters are caused not only in one cause. In the case of Kumamoto Earthquake which happened in April 15, 2016, the bridges remained as designed even after the earthquake, but the approach roads collapsed due to land slide and the bridge was destroyed by the rocks of the land slide. These evidences show that selection of the location of structures are far more important.

The engineers usually check the soil and ground of construction sites by core balling, etc., but they may not be enough in some cases. From now on, it is important to estimate the worst scenario before construction starts.

Photo of Aso Oohashi (Great Aso Bridge)