ICUS NEWSLETTER

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Institute of Industrial Science
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EASTERN JAPAN STRUCK BY MAGNITUDE 9.0 EARTHQUAKE AND MASSIVE TSUNAMI

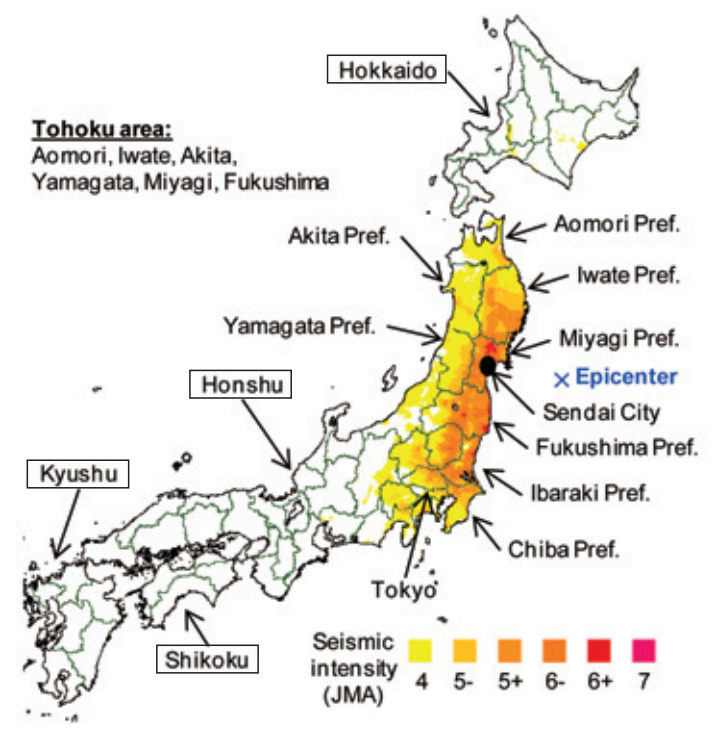
By
Kimiro Meguro[1]

On March 11, 2011, at 2:46 pm Japan standard time, a magnitude 9.0 earthquake struck off the eastern coast of Honshu, Japan's main island, approximately 129 kilometers east of Sendai. This earthquake triggered a massive tsunami, which inundated the eastern Pacific seaboard of Japan with waves up to tens of meters high. The Tohoku region was hit the hardest, particularly the coastal areas of Iwate, Tochigi, Fukushima, and Ibaraki prefectures. As of the time of this newsletter's publication, more than 23,000 people are confirmed dead or missing.

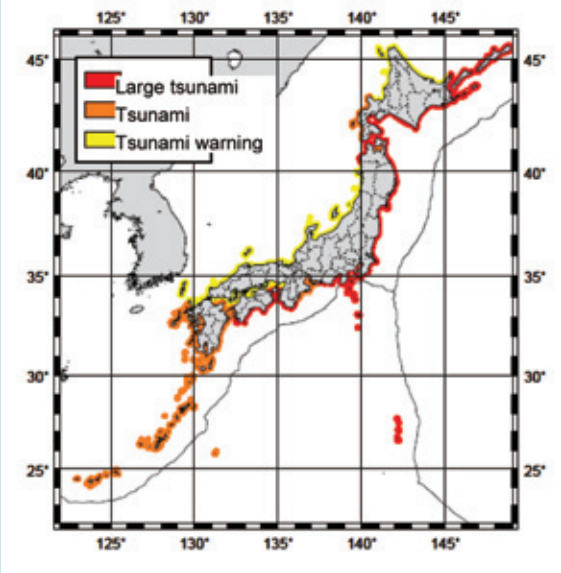
At this time, ICUS is preparing a special-edition ICUS Newsletter to help disseminate important data about the earthquake, tsunami, and its aftermath, along with reconstruction efforts, and we hope to publish it soon.

[1]Director, Professor, ICUS

Scenes of damage from the Tohoku area



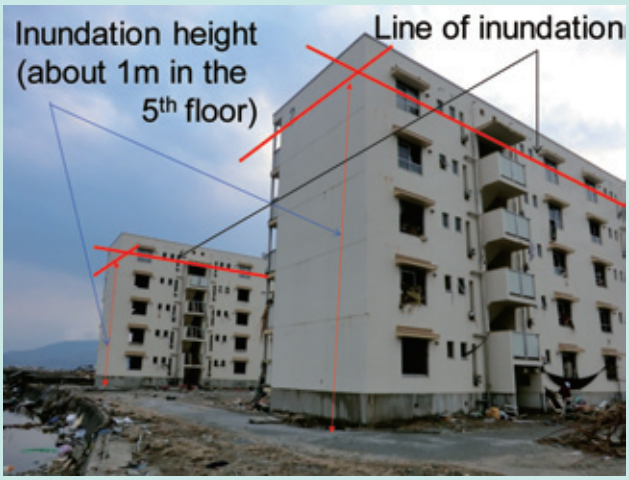
Distribution of seismic intensity (source: Japan Meteorological Agency)



Distribution of tsunami danger (source: Japan Meteorological Agency)

4-story steel building toppled by the tsunami in Onagawa City, Miyagi Prefecture

Concrete bridge swept away by the tsunami in Rikuzentakada City, Iwate Prefecture



Tsunami damage to 5-story concrete RC apartment building in Rikuzentakada City, Iwate Prefecture

Fire-damaged structures in the waterfront area of Minami-sanriku, Miyagi Prefecture

Pancake-type failure of a building in Sendai City, Miyagi Prefecture

Tsunami damage and debris at Sendai Airport, Miyagi Prefecture

Convenience stores in Tokyo were sold out of food the night of the earthquake

Huge traffic jams filled the streets of Tokyo as stranded people tried to get home

ICUS and IIS researchers establish 3.11net Tokyo for disaster-related information collection and dissemination

The Great East Japan Earthquake had a devastating impact on both the public and research community in Japan. In order to support recovery and reconstruction in disaster-affected areas from the perspective of university researchers, several researchers at the Institute of Industrial Science (IIS), the University of Tokyo have built a voluntary group called "3.11net Tokyo." The main activities of this group are to collect and transfer information on various activities related to the academic society, to distribute information on the earthquake, its aftermath, and recovery and reconstruction activities, and to take care of foreign researchers. Meetings are regularly held three times a week in the ICUS Lecture Room for sharing information about support activities, field surveys, briefing sessions and so on.

"3.11net Tokyo" collects documents on this earthquake and its aftermath, and manages an environment for browsing documents and report activities at the clearing house and through a webpage, especially academic survey findings, newspapers and books. The URL is: http://icus.iis.u-tokyo.ac.jp/rnet_edr/

Gathering of ICUS and IIS researchers at a morning meeting

(by S. Kondo)

Risk management of cultural heritage in Kyoto

A FORGOTTEN POINT OF VIEW

The Cultural Assets Preservation Act was established in 1950, one year after the Kondo Mural Painting at Horyuji Temple was destroyed by fire. Since then, thanks to continuous effect by the central and local government and the cultural heritage community, Japan has achieved significant and brilliant results in cultural heritage preservation. These wide-ranging results include the prevention and mitigation of age-induced changes to cultural heritage, the excavation and examination of buried cultural assets, and protecting cultural heritage from fire.

This is not to say, however, that there has been enough done in preparing for natural disaster. Many treasures have been lost due to natural disasters – for example the damage of the stage on the sea at Itsukushima Shinto Shrine during Typhoon No. 18 in September 2004, or the damage to the five-story pagoda at Murouji Temple from a fallen tree in September 1998.

The field of cultural property protection is wide and varied, with the problem of natural disaster alone having been overlooked. Experts in the field of cultural property preservation recognize the need to focus on this problem in the future, but have not worked together to tackle the problems inherent in protecting cultural properties from disaster. Safeguarding against natural disaster has also been neglected among cultural property preservationists. Since cultural properties and assets are irreplaceable, they should be viewed from a different perspective than other assets.

WHAT'S THE PROBLEM?

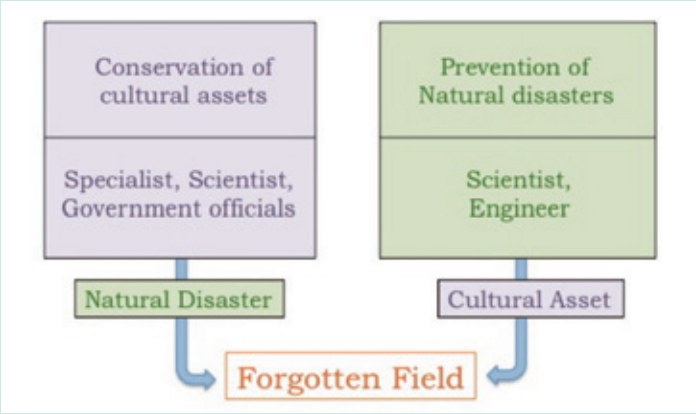
In the Great Hanshin-Awaji Earthquake of 1995 Kyoto was shaken by seismic intensity 5, but damage was relatively slight. Kyoto is located some 50 to 60 kilometers away from Kobe, so if an earthquake were to strike closer to Kyoto, it is not hard to imagine that many more temples and shrines would be damaged. There is not only a lack of equipment and facilities to combat earthquake-induced fires, but also a shortage of reserve water. Without enough water reserves, fires in surrounding areas will not be prevented from spreading to the precincts of temples and shrines. This is exacerbated by such problems as the lack of quake-resistant water cannon pumps and power-generating equipment at temples and shrines. The biggest problem is that these measures for containing the spread of fire are not considered.

INCREASE IN FIRE RISK

Kyoto has one of the lowest rates of fire outbreak among large cities in Japan. This is probably due to the visceral sense of potential danger among the citizenry of Kyoto, which contains many old wooden buildings. However, a low rate of fire outbreak and high resistance to fire are two different things. Since there are many old buildings, if a fire were to break out, it would be very difficult to extinguish.

Just one hundred years ago Kyoto's population lived in a smaller area, with most of the city as farmland. Today the entire Kyoto basin is covered with residential buildings from every corner to corner, and the populated area expanded about five-fold in one century. Since this densely-populated area is covered with flammable material, if multiple fires were to break out there simultaneously, many national treasures would definitely be lost.

Furthermore, reconstruction of such treasures is very difficult in current times due to the loss of political power and reduced support from private individuals. If many properties were lost to a fire, they would not be rebuilt as they were in the past.



Protection of cultural heritage from natural disaster

ACTIVE SEISMIC PERIOD

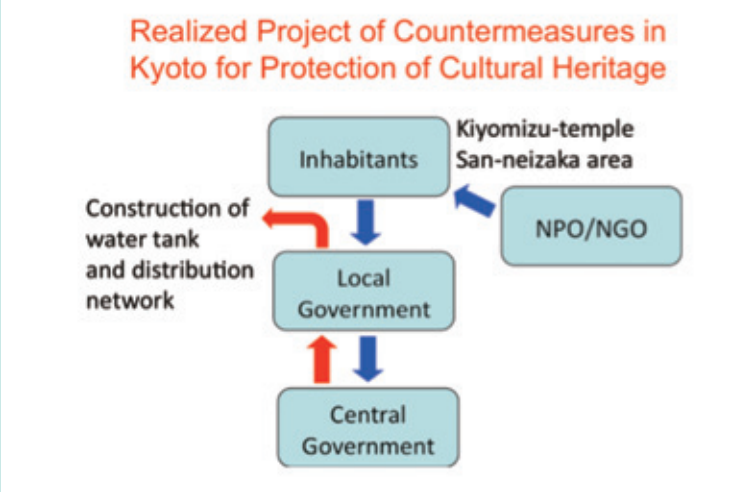
There were only two earthquakes of magnitude 6 or greater in the Kinki Region during the forty years between the Fukui and Great Hanshin-Awaji Earthquakes. However, during the fifty years between 1900 and the Nankai Earthquake of 1949, there were more than thirteen earthquakes of a magnitude of 6 or greater in the Kinki region alone, with all of them coming during the short period between 1925 and 1943. History shows that the Tokai, Tohnankai, and Nankai Earthquakes along the Nankai Trough recur over cycles of 100 to 120 years, so earthquakes in these regions should be looked at in terms of a hundred years. From this point of view, it can be said that we are in an active period like the one that began in 1925, this time starting with the 1995 South Hyogo Prefecture (Kobe) Earthquake.

"LIFE INSURANCE" FOR KYOTO

Some 47 million tourists flock to Kyoto each year. Since they come to see the historic buildings and cultural properties at the temples and shrines, the loss of these assets would hurt Kyoto terribly, and the number of people who visit would drop drastically. If cultural assets determine the fate of Kyoto, shouldn't it have an insurance policy to protect itself? Such insurance is to be found in disaster prevention measures. At the present time, however, Kyoto's cultural assets do not seem to be sufficiently insured.

WHAT MUST BE DONE

The importance of cultural heritage disaster mitigation is recognized by the national government and some local governments. The city of Kyoto, with its wealth of cultural properties, has for the past several years expressed concern over these issues. Determined to maintain its historical ambience, the city has set up a committee to find a way to create a water supply system for use in disaster prevention efforts. Meanwhile, the Society for Protecting Cultural Assets from Disaster, an NPO, has been active for thirteen or fourteen years, though formerly as a different organization. At the request of the national government, the society, Kiyomizu Temple and local citizens have collaborated to formulate specific disaster prevention measures for Kiyomizu Temple, Sanneizaka, and the surrounding area. The implementation of cultural heritage disaster mitigation measures requires not only the cooperation of custodians of cultural properties but also a specific plan that is acceptable to local citizens.



Cycle of collaboration towards disaster countermeasures

THE WORK HAS BEGUN

While paying due attention to historical ambience, the Society for Protecting Cultural Assets from Disaster has also explored the particulars of a water supply system for use in disaster mitigation efforts. The NPO formed a Study Group for Maintaining a Disaster Mitigation Water Supply System, and crafted a plan thereof with cooperation from the temples, local government, and Kyoto City Fire Department. Through workshops and discussions they developed a proposal to dig a tunnel (to avoid blemishing the landscape) through the mountains of Higashiyama for storing water, and to install fire hydrants and a water sprinkler system. Funding for the first phase of this project was approved in 2006, and is the first national project for protecting cultural assets against natural disaster. The focus of the project is a 1,500-ton underground water storage tank beneath the "disaster-prevention park" which will be used not only for fighting fires during after big earthquakes but also as easy-to-operate fire hydrants for other fires as well.

(by Kenzo Toki,
Professor and Director,
Research Center
for Disaster Mitigation
of Urban Cultural Heritage,
Ritsumeikan University)

2011 Christchurch Earthquake – quick report from the field

An earthquake of magnitude 6.3 centered some 10 kilometers from downtown Christchurch occurred at 12:51 on Feb. 22, 2011. The shallow earthquake occurred at a depth of 5 kilometers and caused more damage in the Christchurch CBD (Central Business District) than the 2010 Darfield (Canterbury) earthquake of magnitude 7.1, which occurred 5 months prior to this event. As of March 18, the death toll reportedly reached around 180.

Some earthquake records show that buildings may have experienced severe shaking more than double the current code requirements in New Zealand. The buildings designed according to the current seismic codes, however, performed well, with a few exceptions such as a 17-story modern RC building, in which its staircases collapsed.

In New Zealand, ductility was not explicitly required for non-residential buildings designed before 1976, and much improvement was made in the design standard for RC buildings in the early 1980's to eliminate brittle behaviors and to ensure the strong column and weak beam system. It should be noted that many buildings designed before the early 1980's may have experienced shaking exceeding the code requirements but many of them had minimal structural damage.

The most serious building damage was found in pre-1970's RC buildings which had survived the 2010 Darfield earthquake. Some of them had total collapse and/or severe shear failure in columns.

URM (unreinforced masonry) buildings within the CBD were significantly damaged, just as they had been during the 2010 Darfield earthquake. Several buildings recently seismically upgraded also collapsed, including the Christchurch Cathedral. URM buildings that were temporarily shored or retrofitted after the 2010 Darfield earthquake showed a wide variety of responses: some performed successfully but some others partially or totally collapsed.

In addition to the shaking-induced damage, much damage due to soil liquefaction was found. The suburbs had more significant soil liquefaction than the downtown district, and the northern and eastern suburbs along or close to the Avon River had the most serious damage.

Building safety evaluation according to the Civil Defense/ City Council Building Safety Evaluation Operations was made by structural engineers to assess the buildings' safety for re-occupation or temporary re-entry. As of March 18, 826 buildings (23%) were red tagged, 862 buildings (24%) yellow tagged, and 1933 buildings (53%) green tagged [1].

[1] W. Y. Kam, U. Akguzel, and S. Pampanin: "4 Weeks on: Preliminary Reconnaissance Report from the Christchurch 22 Feb. 2011 6.3 Mw Earthquake," WEB at NZSEE Clearinghouse.

Acknowledgement: This field survey was made under the AIJ-JAEE joint reconnaissance led by Prof. S. Kono of Kyoto University with cooperation from Prof. S. Pampanin, Dr. W. Y. Kam, and Dr. U Akguzel of the University of Canterbury. The author gratefully appreciates their support.

(by Yoshiaki Nakano, Prpf. IIS, The University of Tokyo)

Massive liquefaction at Bexley

Severely damaged pre-1970's RC building

A URM building with temporary shoring survived

Briefing of structural engineers for building evaluation

Seminar on "Current Seismology and Related Urban Safety Engineering Researches in Mongolia"

At the invitation of Prof. K. Meguro, Director of ICUS, three scholars from Mongolia visited ICUS on 20 January and held a seminar on "Current Seismology and Related Urban Safety Engineering Researches in Mongolia." The visitors were: Prof. Dr. S. Demberel, Scientific Secretary, Research Center of Astronomy & Geophysics (RCAG), Mongolian Academy of Sciences (MAS), Dr. M. Ulziibat, Head of Seismological Department, RCAG, MAS, and Dr. E. Ninjgarav, Associate professor of Geotechnical Engineering, Vice Director of the School of Civil Engineering and Architecture, Mongolian University of Science and Technology (MUST).

In recent years, seismic activities have been increasingly observed near and within Ulaanbaatar area, the capital city of Mongolia where nearly one-third of the total population is concentrated. Two times as many earthquakes were recorded during the last five years (2005-2010) as between 1970 and 2004, and more than 1600 events, having a magnitude between 0.5 to 4.2 are caused mainly due to two major active structures: NS Emeelt and EW Hustai active faults. Also, with the mining boom, there are increasing numbers of newly built high rise buildings in the city, thereby creating an amount of new concerns among the society on the safety of old and new buildings against seismic hazard.

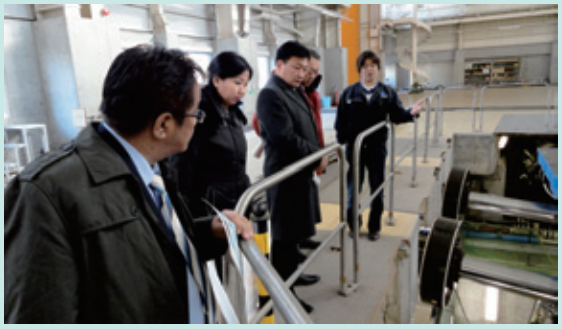
Against these backgrounds, urban disaster reduction has become one of the priority policy areas of the government of Mongolia, and the government has been showing its willingness to cooperate with foreign governments, including Japan. In November 2010, when the President of Mongolia paid an official visit to Japan, the two governments issued a joint statement that touched upon, among others, importance of enhanced bilateral cooperation in the area of disaster prevention/ reduction. The seminar, held at ICUS this time, therefore, was quite timely to follow up these recent moves.

Dr. Demberel talked about historical development of seismology in Mongolia since the Soviet time, introduced current activities of RCAG, MAS, and touched upon lots of tasks ahead from now on. Dr. Ulziibat introduced recent research results in the context of seismic hazard assessment of Ulaanbaatar area. Dr. Ninjgarav presented geotechnical features of Mongolian soil properties, and said that 61 % of the ground surface is within the semi permafrost region. Dr. Demberel also expressed his hopes for the strengthened cooperation between Mongolia and Japan.

The seminar was also attended by Prof. Y. Nakano, who presented some salient features of earth quake engineering researches in Japan, as well as Prof. K. Meguro, who introduced ways of improving seismic performance of weak brick and masonry structures using PP-band method.

Prior to the seminar, three scholars also paid a visit to relevant Japanese institutions such as Disasters Reduction and Human Renovation Institution, Asian Disaster Reduction Center (both in Kobe), Nojima Faults Preservation Musium (in Awaji-shima), National Research Institute for Earth Science and Disaster Prevention, Public Works Research Institute (both in Tsukuba), Earthquake Research Institute of the University of Tokyo, Life Safety Learning Center of Tokyo Fire Department, and Tokyo Metropolitan Gov. Disaster Prevention Center.

(by Y. Ichihashi)



Visiting the Public Works Research Institute

The Mongolian delegation with Prof. Meguro

Symposium on forefront and challenges of water resources management in Bangkok, Thailand

On January 29, 2011, a half-day symposium on the "Forefront and Challenges of Water Resources Management in Southeast Asia," organized by ICUS, the Regional Network Office for Urban Safety (RNUS), Asian Institute of Technology (AIT), and Chula Uniseach, Chulalongkorn University, was held at the Novotel Bangkok Fenix Ploenchit Hotel.

Six distinguished speakers in the field of water resources management from the academic field and government in Thailand and the USA gave excellent presentations as follows (order of presentation):

- *Mekong sub-regional framework: opportunities and challenges (Ms. Manitkul, Thai Ministry of Foreign Affairs)*
- *Vulnerability assessment of freshwater resources in the Mekong River basin (Dr. Babel, AIT)*
- *Integrating community water planning with provincial development plan by area based information system (Dr. Koontanakulvong, Chulalongkorn University)*
- *Water resources management in MRC & Thailand's perspectives on MRC's role (Mr. Siripornpibul, Thai Ministry of Natural Resources and Environment)*
- *Who's river is it anyhow? Some issues regarding transboundary development on the Mekong River basin (Prof. Rogers, Harvard University)*
- *Challenges to benefit sharing in the Mekong River basin (Prof. Ogden, Northeastern University)*

Following the presentation session, a panel discussion with the six presenters was chaired by Dr. A. Kawasaki. Many interesting and sharp questions came from the floor, especially about the impact of upstream Chinese dams on lower Mekong River basins. Because historical drought and flood happened recent years in the Lower Mekong, some people blame China for causing such problems in the Mekong. The reply from the panel member was as follows: "Upstream Chinese dams might have actually affected draught and flooding in the Lower Mekong, but nobody knows because Chinese dam operation information is not open. At the same time, however, rapid changes in human activities such as population increase, deforestation, and land development in Laos, Thailand, Cambodia and Vietnam also largely affected the water flow in the Lower Mekong basin." Many questions and comments were raised during the panel discussion, but discussion had to close due to running out of time.

About 180 participants joined the symposium: 53% from university; 27% from government; and 20% from private sector and other. Although the announcement of this symposium was just two weeks before the symposium, the application exceeded 200 in just 10 days, so we had to decline applications starting several days before the symposium. This demonstrates Thailand's high degree of interest in water resources management.

(by A. Kawasaki)

Panel discussion with the six presenters

Participants at the symposium

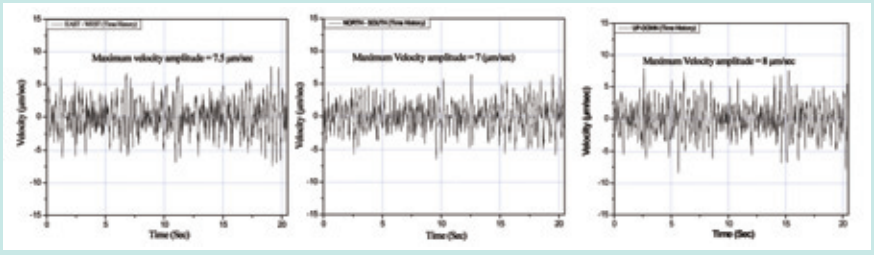
BNUS Activities

FIRE FIGHTING AND HAZARDOUS FIRE LEGISLATION WORKSHOP

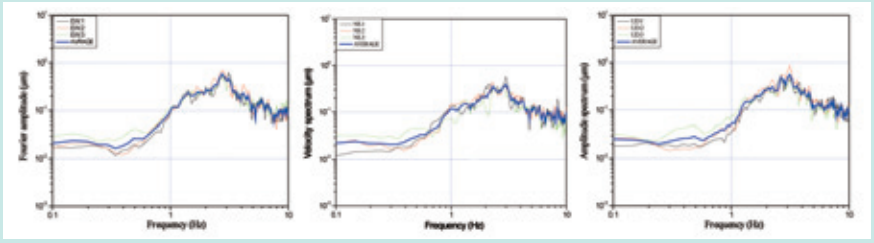
A workshop on "Fundamental Concepts of Fire Fighting and Formulation of Legislation Regarding Hazardous Fire" was held on January 20, 2011, at the ITN Center, Bangladesh University of Engineering and Technology. This day-long workshop was organized by BUET-JIDPUS (Japan Institute of Disaster Prevention and Urban Safety). The workshop was divided into two sessions with two experts who gave lectures on different issues regarding the basic concepts of fire hazard, fire fighting systems, design standards, standard rules, and regulation and law practiced in Bangladesh. The main lecturer was architect Tajuddin Ahmed Chowdhury and Dr. Md. Maksud Helali, professor of the Mechanical Engineering Department, BUET. Forty participants took part in this workshop from different professional groups, including a research planner from BNUS, Sharmin Ara. The contents of the workshop were particularly helpful for the fire fighters of the Fire Service and Civil Defense (FSCD).

MICROTREMOR H/V TECHNIQUE FOR SITE RESPONSE ANALYSIS

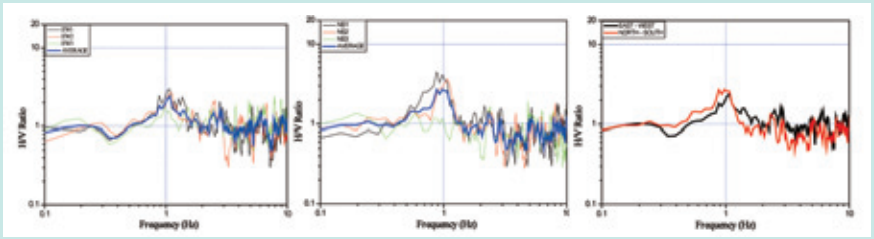
The amplitude ratio (H/V) of horizontal to vertical spectra has become popular to determine the predominant period and amplification of a site. It is well known that the degree of damage during earthquakes strongly depends on dynamic characteristics of buildings as well as amplification of seismic waves. Among the other time consuming and expensive approaches, microtremor is the easiest and cheapest way to understand the dynamic characteristics of soil as well as structural element. In a short period of time it provides several information including natural frequency and amplification and vibration characteristics of soil and structure at different frequencies.



Velocity time history along three directions



Three segments of Fourier amplitude and average values



H/V spectral ratio

Microtremor data recordings have been carried ouat in 132 locations in Dhaka City. Each record comprises three components: east-west, north-south, and up-down. For spectral analysis three noise-free portions of 20.48 seconds have been taken at 100 hertz instrumental sampling. For checking the stability of soil response using microtremor at each point of sensor location microtremor data recordings have been executed at different times of the day.

The results show that the ranges of predominant frequency in BUET area are between 0.30 and 6.5 Hz, and Horizontal to Vertical spectral Ratio (H/V) ranges between 1.0 and 6.5. In some locations of the observation point the H/V ratio obtained was very flat. In other locations the result was very clear predominant peaks. For the stability analysis of microtremor thirteen selected points show that H/V ratios are very stable. In general, the long period or low frequency zone corresponds to the soft soil zone, with shorter period or high frequency in the hard and middle soil zones. In some places, long periods or low frequency have been detected in the hard soil zone, this being due to local artificial deposits caused by compacting the soil.

(by M.A. Ansary, BNUS)

RC62 Committee Activities

The performance of infrastructures necessary to support our lives deteriorates due to changes in required features and aging. Traditionally, evaluation of structures has been tried utilizing various measuring techniques. However, technology which can appropriately evaluate structural performance has not been established. In addition, techniques for evaluating the performance of the entire structure considering both the structure and the ground have not been studied.

From this background, the "Research committee on evaluation technology of the performance degradation due to aging infrastructure" (RC-62) started over three years ago in April 2008, and we have conducted quantitative techniques to evaluate the performance of concrete and soil structures and technical investigations to evaluate the performance of the entire structure to encompass the structure from the ground.

In the first year, we organized existing technologies of the measurement and evaluation on each field such as concrete and soil structures, etc., and discussed the direction of future technologies. Next, as a concrete example, we selected a box culvert structure in the earth with reinforced soil walls (Terre Armee) and we examined structural deformation due to changes in ground conditions. Based on these results, we proposed a technique for monitoring or measuring the deformation expected. For the reinforced earth wall, we tried to assess the soundness of reinforcement in the ground using field tests with acoustic shockwave. This series of study results are summarized in a final report published in March 2011. Although this study is limited, continued work is required for effective and efficient maintenance of infrastructures.

(by Kenji Hayakawa,
Tokyu Construction Co., Ltd.

RC67 Committee Activities

The "Research Committee on Evaluation of CSR Activities in Environmental Conscious Society" (RC67) has continued to work for two years in order to create a guideline for CSR activity about forests. Specifically, over the first year we investigated and analyzed the CSR activities of private Japanese companies which have responsibilities related to environmental issues. Then, during the second year we focused on hearing from the voices of those actually in charge of CSR activities through hearings and interviews with leading companies.

At the end of March 2011, we published our conclusions as the "ICUS Committee Report 2010-02." In this report, we proposed the guidelines and an evaluation form for improving the quality of current CSR activities. Following is a brief summary of the reported guideline and evaluation form.

The results of the interview indicate that the scale, continuity, PDCA (plan-do-check-act), environmental educations, contributions to local community, support of forest management, soil and water conservation and biodiversity are all needed for evaluation of CSR activities. The evaluation form was created based on this result. Moreover, we concluded that four functions of CSR activities are needed to improve the quality of CSR activities through analysis of the evaluation forms. Important functions are: 1) CSR activities should support sustainable forest industry, 2) CSR activities should be close to the core business, 3) experts should contribute to private CSR activities, and 4) CSR activities should collaborate with other CSR activities. We would also like to add that sustainable use of wood is one type of CSR activity. Finally, RC67 hopes that the report will contribute positively to CSR activities. If you want to know more about these results, please refer to the "ICUS Committee Report 2010-02" (available in Japanese language only).

(by T. Endo)

Report on LiDAR research in Korea

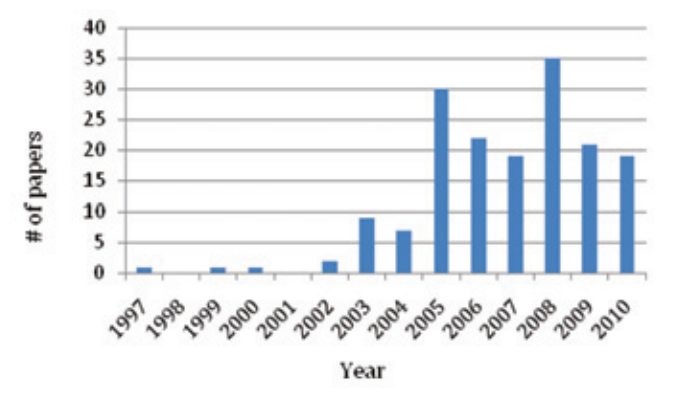
LiDAR (Light detection and ranging) is one type of remote sensing instrument which measures terrain surface and 3-dimensional structures. South Korea actually has more LiDAR instruments than Japan despite the area of Korea being roughly just one-quarter the size of Japan.

To investigate the status of current LiDAR research in South Korea, I stayed in Pusan for two months from December 1, 2010 to January 31, 2011. The research counterparts during my stay were Prof. Yong Cheol Suh, Prof. Chul Uong Choi, and Dr. Yang Won Lee in the geoinformatic engineering group at the Pukyong National University, who helped me collect domestic papers on LiDAR research written in Korea.

I found that the amount of LiDAR research increased rapidly from 2005, and has continued to increase until now. The major research field in LiDAR application was related to civil engineering applications, such as extraction of building and terrain shapes. There was little environment-related research, however, in contrast to Japan. Environmental research using LiDAR may become more popular in the future in South Korea, and I hope that Japan and South Korea will tackle these issues together in the future.

Acknowledgement: Funding for this research was provided by the "Global Center of Excellence for Sustainable Urban Regeneration."

(by T. Endo)



Number of Korean domestic LiDAR research papers

ICUS Activities

- *Prof. K. Meguro traveled to Bangkok, Thailand, from Feb. 4 to 7 for a lecture on earthquake preparedness.*
- *Prof. Sawada visited Thailand from Jan. 5 to 11 for a meeting and investigation on forests in the Mekong region.*
- *Prof. Sawada also attended a meeting in Laos from Feb. 3 to 9 for a meeting related to forest management and natural disasters.*
- *Dr. R. Kuwano attended the 5th International Conference on Earthquake Geotechnical Engineering from Jan. 8 to 17 in Santiago, Chile.*
- *Dr. T. Kato visited Chengdu, Sichuan, China from March 7 to 12 for an investigation.*
- *Dr. A. Kawasaki traveled to Kunming and Jinghong, China, Vientiane, Laos, and Phnom Penh, Cambodia, from Jan. 1 to 13 for research investigation.*
- *Dr. A. Kawasaki also visited Amsterdam, Holland, and London, England, from March 10 to 19 to share his research works.*

Awards

- Mr. M. Hosoo, master student in Kuwano Laboratory, won the Furuichi Award from the Dept. of Civil Engineering, the University of Tokyo, for his excellent master research entitled "Study on healing capability of bio-cemented sandy soil."
- Ms. M. Sato, master student in Kuwano Laboratory, also won the Furuichi Award from the Dept. of Civil Engineering, the University of Tokyo, for her excellent master research entitled "Effects of underground structures on expansion of subsurface cavaties."

Editor's Note

On March 11th, at 2:46 pm a massive earthquake occurred off the eastern coast of Japan and caused a huge tsunami. In the Sanriku area, which has a history of tsunami damage and was also directly affected by this recent earthquake, there are many countermeasures against tsunami in place, such as large seawall, education about tsunamis and tsunami drills due. But even with these countermeasures the damage and casualties are larger than those which resulted from the 1896 Sanriku earthquake.

What countermeasures should we take? Should all people live in high ground or another area far from the sea for safety? Should higher seawalls be built? Should all buildings be built by reinforced concrete structure and designed to withstand tsunami forces?

There is not only disaster safety to think of, but also many other problems related to communities, industries, landscapes, and so forth – all of which need to be solved. Unfortunately, these problems cannot be solved easily, but gathering all the knowledge and techniques in Japan as well as around the world is a good place to start. Researchers all over Japan, including those in ICUS and also in the University of Tokyo are working towards solving these problems and helping move towards reconstruction.

(by M. Koshihara)

Announcement of abstract due date for USMCA 2011 (Chiangmai, Thailand)

We would like to announce that the due date for submitting abstracts for the 10th International Symposium on New Technologies for Urban Safety of Mega Cities in Asia (USMCA 2011), to be held in Chiangmai, Thailand from October 12 to 14, has been extended to the middle of July, 2011. Further information such as the abstract format is available at the USMCA 2011 official website:

http://www.set.ait.ac.th/rnus/USMCA2011/index.html