ICUS NEWSLETTER

International Center for Urban Safety Engineering

Institute of Industrial Science
The University of Tokyo

VOLUME 9 NUMBER 4
JANUARY-MARCH 2010

EARTHQUAKE COUNTERMEASURES FOR SAFER FUTURE IN KOREA

By
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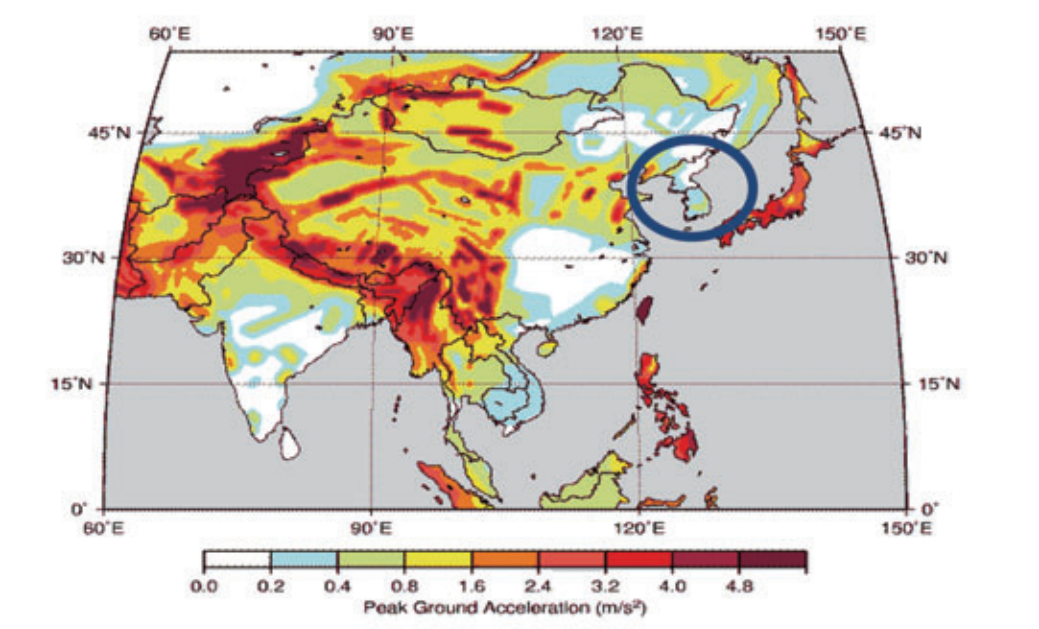
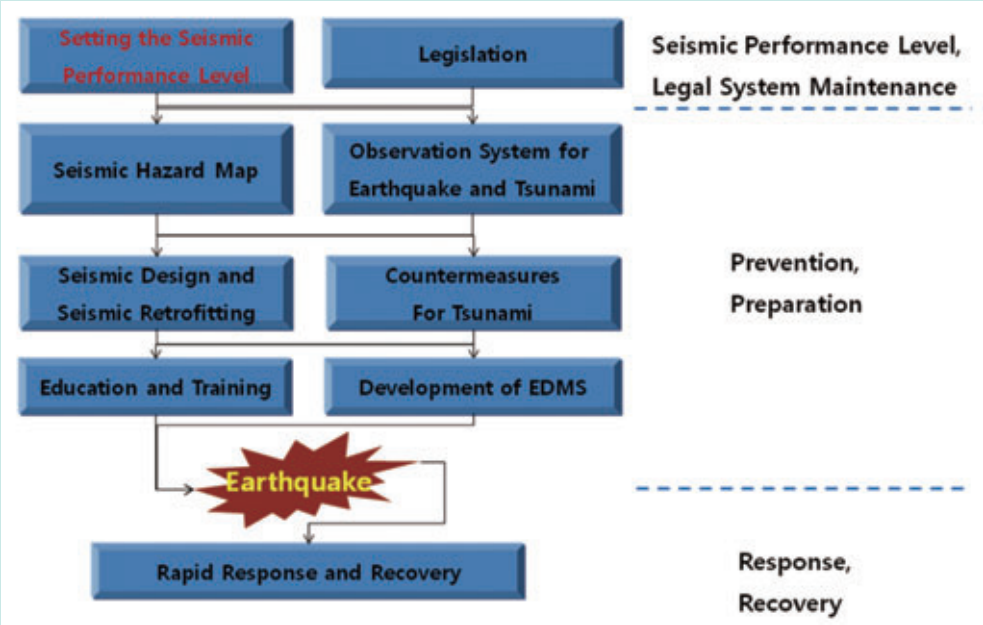
The devastating 1995 Kobe (Hyogoken-Nambu) Earthquake in Japan with more than 6,400 fatalities, the 1999 Chichi Earthquake in Taiwan with about 2,500 fatalities and the 2008 Sichuan Earthquake recently in China with more than 69,000 confirmed fatalities have awakened the public to a possible earthquake disaster in Korea. After the Kobe Earthquake in 1995, the Korean government added "earthquake" as a disaster item in the revised "National Disaster Countermeasures Act" and established the 1st Earthquake Disaster Countermeasures Plan. Continued effort has been made for earthquake hazard mitigation with the 1st to 3rd Earthquake Disaster Countermeasures Plans and Earthquake Disaster Countermeasures Act enacted on Mar. 28, 2008. A comprehensive plan was drawn up in 1998 to establish the mitigation countermeasures, emergency response, and rehabili-



Seismic hazard map for Asia showing the seismicity of Korea (http://www.seismo.ethz.ch/gshap/eastasia)



2nd Phase of Earthquake Disaster Countermeasures Plan

tation for related agencies. In this article, historical and recent earthquakes in Korea and 1st to 3rd phases of the Earthquake Disaster Countermeasures Plan are introduced along with research related to the Earthquake Disaster Countermeasures Plan.

As shown on the seismic hazard map on the previous page, Korea is relatively safer than neighboring countries located on the Pacific Rim such as Japan and China. However, Korea is not free from earthquakes according to historical records, which indicate that the number of earthquakes increased from the 15th to the 18th century. In addition, frequency steadily rose in the 20th century. Therefore, it is necessary to prepare for future earthquake events.

1ST PHASE OF COUNTER-MEASURES PLAN

The 1st Earthquake Disaster Countermeasures Plan of the Korean government was established on January 27, 1995, with the participation of relevant ministries and experts. In this plan, seismic performance level, maintenance of the legal system, and the Earthquake Disaster Countermeasures Act were mainly focused on, with the following goals:

- Promotion of the Act for Earthquake Countermeasures
- Establishment of a practical plan for the earthquake disaster mitigation
- Reduction of casualties by maintenance of rescue and relief system
- Strengthening the relationship between ministry and experts
- Enhancing consciousness of earthquake disasters through public relations
- Strengthening and developing the seismic design code and provision
- Encouraging research and development for earthquake damage mitigation

From the 1st phase, adaptation of the seismic design was widened for 20 kinds of facilities, and seismic design provisions were re-established and applied. Through the evaluation of the 1st phase, the 2nd phase was established and completed in December of 2005.

2ND PHASE OF COUNTER-MEASURES PLAN

After the earthquake in Fukuoka, Japan, on March 20, 2005, the 2nd phase of Earthquake Disaster Countermeasures Plan, shown above, was established and reported on April 12, 2005. After building a research and development (R&D) and policy plan over five years, the 2nd phase was started. The direction and goals were planned as follows:

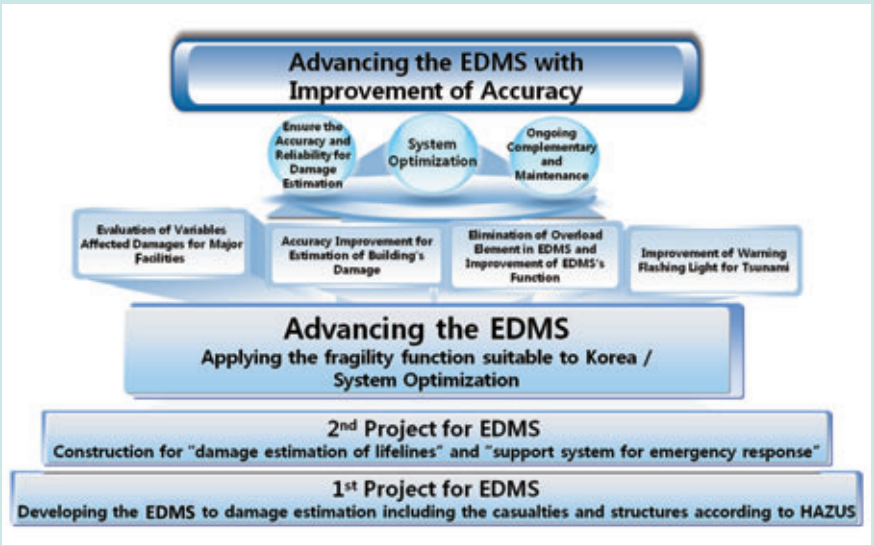
- Enactment and maintenance of the Act for earthquake disaster mitigation
- Support of early response by improving the observation and alert system for the earthquake and tsunami
- Developing and strengthening the education and training program for rapid response to the earthquake disasters
- Improving mitigation by strengthening the seismic provisions and developing an earthquake hazard map

From the 2nd phase, the earthquake/tsunami alert system and the Earthquake Disaster

Management System (EDMS) were successfully developed. Through the development of EDMS, a national intensity map and estimation of casualties and structural damage were created.

The Earthquake Disaster Countermeasures Act (Act No. 9001) was enacted on March 28, 2008 and enforced from March 25, 2009, a related enforcement decree (Presidential Decree No. 21362) was enacted and enforced from March 25, 2009, and an enforcement ordinance (Ordinance of Ministry Public Administration and Security No. 72) was enacted and enforced from March 26, 2009.

Precedence and Advanced Research on EDMS



Advancing the EDMS

3RD PHASE OF COUNTER-MEASURES PLAN

To make and keep Korea safe against future earthquakes, the 3rd Earthquake Disaster Countermeasures Plan is under development from 2009. This 3rd phase, from 2009 to 2013, focuses mainly on six subjects, including (1) seismic retrofitting of existing structures which used non-seismic design, (2) development and application of seismic hazard map, (3) development of earthquake notification and response system, (4) development of tsunami countermeasures, (5) improving public education and training related to earthquake disaster prevention and (6) strengthening and maintaining the legislation and organization dedicated to earthquakes. This plan will be established with three main tasks and eight subsidiary tasks, shown to the right, and the subsidiary tasks will be divided into a total of 24 tasks. From the eight subsidiary tasks, R&D projects are being partially implemented in 2009 with 58 detailed projects.

(1) Seismic Performance Level and Legal System Maintenance
- Establishment of integrated seismic performance level
- Maintenance of organizations for promoting the Earthquake Disaster Countermeasures Plan

(2) Prevention and Preparation
- Advancement of earthquake/ tsunami observation system
- Development and utilization of the earthquake hazard map and active faults map
- Re-establishment of seismic design provision and promotion of retrofitting for existing facilities
- Establishment of tsunami disaster countermeasures
- Strengthening public education and training program for earthquake disaster prevention

(3) Response and Recovery
- Development of earthquake rapid response system

In conclusion, it is urgently necessary to prepare for future earthquakes. Lessons from past disastrous earthquakes as well as efforts for earthquake disaster mitigation will be devoted to developing the Earthquake Disaster Countermeasures Plan.

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Integration of advanced technologies for construction, environmental protection, and safety in the Yamate Tunnel

The 4.3 kilometer section of the Central Circular Shinjuku Route "Yamate Tunnel" between Shibuya and Shinjuku was opened on March 28th, 2010. This section followed the completion of the 6.7 kilometer section between Shinjuku and Ikebukuro, which was finished in December of 2007. The Yamate Tunnel is intended to transfer traffic which is not bound for the Tokyo city center to the Central Circular Route, thus greatly reducing traffic congestion and enhancing usage of the Tokyo Metropolitan Expressway network.

YAMATE TUNNEL OUTLINE

The Central Circular Route is 47 kilometers long with a radius of about 8 kilometers from the Tokyo city center, as shown to the right, with roughly 37 kilometers currently in service. The Yamate Tunnel is an 11 kilometer expressway located in the western part and runs underground beneath circular Route No. 6 in order to preserve the environment and make effective use of limited urban space. The alignment of the tunnel, structural types and con-struction methods have to consider various constraints such as river crossings, subways, trunk roads and railways, and major existing public utilities.

INNOVATIVE TUNNEL TECHNOLOGIES

The recently developed shield tunnel construction technique was utilized for roughly 80% of the tunnel section. In response to the application of shield tunnel with such a large diameter, numerous innovative construction technologies were developed such as the "shield tunnel expansion methods" (STEMS) to construct underground junctions and the connection of ramp tunnels; "u-turn tunneling operations" which rotates a shield by 180 degrees in a shaft; and so on.

ENVIRONMENTAL PRE-SERVATION MEASURES

In addition to environmental improvement due to the alleviation of traffic congestion, an NO_2 removal system for extracting low concentrations of NO_2 was installed in nine ventilation stations. The system is composed of an electric precipitator and NO_2 removal equipment. The removal performance such as removal ratio for suspended particulate matter (SPM) and NO_2 is more than 80% and 90%, respectively, on a daily average.

SAFETY AND DISASTER PREVENTION SYSTEM

In order to secure safety and prevent disasters such as fire or other accidents, various equipment to achieve AA grading such as emergency phones, fire detection systems, water

Central circular route

Shield tunnel expansion method

sprinklers, foam hydrants, and so forth were installed. In addition, several advanced technologies were employed due to the tunnel's length. The tunnel is monitored 24 hours a day from a traffic control room by CCTV cameras which can immediately detect unusual traffic incidents using image processing, and a loud speaker system can provide evacuation information. Furthermore, the Metropolitan Expressway motorcycle patrol corps, the first emergency-designated motorcycle squad operated by a private company in Japan, was founded to ensure rapid initial response to accidents.

FUTURE PERSPECTIVE

Early completion of the entire Central Circular Route is highly desired to provide an effective expressway network in the Tokyo Metropolitan area which can reduce traffic congestion as well as provide significant socio-economic benefits and improve environmental preservation. The last section, the Shinagawa Route, is under construction and scheduled for completion in 2013.

In the meantime, the innovative construction and safety technologies and disaster prevention systems developed by the Metropolitan Expressway Co., Ltd. will be expected to contribute further to effective utilization and development of underground spaces in urban areas.

(by H. Dobashi, Metropolitan Expressway Co., Ltd.)

Tour of the Uemachi Terrace, a potential disaster area

The Uemachi fault belt runs 42 kilometers from Toyonaka City to Osaka City, passing through Kishikawa City. It is a reverse fault, running primarily south to north, with the west side rising up at an average velocity of roughly 0.4 meters per 1,000 years. The estimated average activity interval is around 8,000 years. According to an estimation by the Central Disaster Prevention Council, the potential loss of life due to Uemachi fault belt move may be up to 42,000 people.

The Karahori area, which is located on the Uemachi Terrace, is an unusual area where the scenery, such as old tenement houses (nagaya), and machiya utilize the geographical features to create alleys. I participated in a walking tour of this area on January 19, 2010 with Mr. Hayakawa, a member of the Karahori Club. This area is located near the moat on the southern side of Osaka Castle, which was originally built at the end of the 15th century. The slope and cliff existed even at that time, and the Karahori shopping street still slopes downward.

The primary feature of this area is neighborhoods with old tenement houses built closely together. However, modern apartment houses have also been recently built here and the population is rapidly increasing.

Although there is the potential for earthquake disaster from the Uemachi fault belt, effort is made to preserve the historical value of the tenement houses through maintanence. When considering disaster prevention, however, there exists significant risk such as collapse of the tenement houses, poor space utilization, fire disaster, and so forth, which need to be solved before a future earthquake strikes.

This area is a good example of the dual problems of how to preserve historical architecture and neighborhood atmosphere while protecting against earthquake damage.

(by M. Numada)

Old tenement houses

Coexistence of old and modern construction

15 years after the Kobe Earthquake: Basic steps for earthquake disaster reduction and the necessity for an integrated disaster management strategy

UNFORGETTABLE JANUARY 17, 1995

Even now, I can still remember clearly the morning of that day. I was awakened in my hotel room in Osaka at 5:46 am by strong shaking. This shaking was due to the 1995 Kobe (Hyogo-ken Nanbu) Earthquake, with a magnitude of 7.3 which lead to the deaths of over 6,400 people, damaged 650,000 structures, and caused over US$ 100 million in direct economic loss. The US-Japan direct International Symposium for earthquake disaster mitigation was scheduled to be held in Osaka, just 30 kilometers east of Kobe City, to commemorate the one-year anniversary of the Northridge Earthquake which struck the Los Angeles area on January 17, 1994. But unfortunately, three hours before the opening of the symposium, the Kobe Earthquake occurred.

I took a taxi to Kobe and wandered around the affected areas of Kobe for a couple of days and nights, surveying the damage from building collapse and fires. I was shocked to see the large gap between what I had learned and reality, and that experience became an unforgettable and formative part of my career as a researcher in the field of disaster mitigation.

WITH STRONG SHOCK AND COMPLICATED FEELINGS

After coming back to Tokyo, I was gripped by complicated and strong feelings of responsibility, powerlessness, apology, and more. I felt that I had to do something, so I worked with my research center, INCEDE (International Center for Disaster-Mitigation Engineering) on a full-color newsletter, as shown below. This special-issue newsletter was delivered to over 140 countries, and was the first English report on the damage survey conducted by Japanese specialists. Other activities included the establishment of KOBEnet, a researcher network for supporting restoration and reconstruction after the Kobe earthquake, with colleagues at the Institute of Industrial Science, the University of Tokyo, and publication of damage reconnaissance reports in cooperation with many earthquake disaster-related associations national and local governments. The importance of seismic retrofitting of existing structures was apparent from these activities, but I felt that focusing only on technical problems was not enough to solve this issue – research on the policy

Cover page and contents of INCEDE Newsletter Special Issue reporting on the Kobe Earthquake disaster

and social systems was also necessary, so I proposed social incentive systems to promote seismic retrofitting activities. Also, I worked to promote disaster education through programs and materials for children and the general public, utilizing picture books, comics, maps, manuals, and more.

CURRENT EARTHQUAKE DISASTER RISK IN JAPAN

Fifteen years after the Kobe Earthquake, what is the most important issue for minimizing earthquake disasters in Japan in this high-seismicity period? In the coming 30 to 50 years, four to five earthquakes of magnitude 8 or higher, and 40 to 50 magnitude 7 events (similar to The Kobe Earthquake) may occur. The total economic loss due to these events is estimated by the national government at roughly 40 percent of GDP, with the number of collapsed and burnt-out structures between one and two million.

KEY FOR EARTHQUAKE DISASTER REDUCTION

It's common knowledge that the final goal of earthquake disaster countermeasures is to minimize the negative impact due to earthquakes. Based on the current situation, how many people have been working towards this goal? Are the people in this field satisfied with only considering their own field – for example, are scientists satisfied focusing only on scientific mechanism; the engineer satisfied with only tackling technical issues; do the administrators only discuss issues in their own section? What is the gap between their purpose and society's expectations? Do they believe that if they solve a problem in their field, they can achieve the final goal? If the problem is due to a lack of political power, they should make efforts to have political power; if it is due to economic or social regulation problems, they should tackle them, and try to find their own solution and implement measures to apply that solution. It is necessary for people to change their mindset. We are not only engineers or researchers, but also citizens and taxpayers, so whatever we do, we should always keep in mind the viewpoint of the citizens and taxpayers. It is important to conduct research and disseminate information to the public keeping in mind this viewpoint, by using basic terminology and clear explanations for the public.

IMPORTANT RESEARCH TOPICS TO BE TACKLED

Considering the above-mentioned points, I believe that the following research topics are important for implementing efficient earthquake disaster countermeasures.

- Record data of the Kobe Earthquake disaster as much as possible in order to fully imagine the whole disaster (the record must have data structure that enables us to analyze the data from various viewpoints)
- Continuous promotion of conventional, individual, and fundamental research (the topics described below can be implemented based on these research works)
- Shift from research focusing on mechanisms to research on developing measures (from focusing on mechanisms based on disaster experience to developing countermeasures and predicting phenomenon which have not yet been observed in past disasters)
- Promote research on quantitative evaluation of the usefulness, social impact, and long-term effect of the social system and regulation related to disaster reduction (without this, it is impossible to implement systems and regulations that can truly contribute to reducing disasters in the whole country and maintain accountability with the taxpayers)
- Establish a promotion system, research promotion, and implementation system for countermeasures on huge, longterm, and complex disasters which haven't been experienced yet, such as large, multi-event disasters
- Establish a cooperation system among universities and academic associations working on disaster research and implement a system for coordinating activities through research organizations, mass media, administrative organizations, and politicians
- Develop a disaster education program and materials for all generations, from infants to adults
- Create and promote the attractive business of disaster reduction
- Establish a system for getting support from other countries in case a large earthquake disaster occurs during the 21st century (this is necessary due to the shortage of human resources, construction labor and engineers necessary for recovery and reconstruction)

(by K. Meguro)

Visit to Ohashi junction before the public opening

Prof. Meguro, Dr. Kuwano, Dr. Miyazaki, and other ICUS members visited the Ohashi Junction site in the Central Circular Route of the Metropolitan Expressway in Tokyo on January 29, 2010, just before opening of the expressway to the public.

The junction is located between the Shinjuku route and Shinagawa route (which is still under construction), as explained in Dr. Dobashi's article on page 4, and has a double loop structure between the Central Circular Route and the connecting route. The latest technology was fully used to reduce environmental impact, and the roof of the junction structure will be utilized as a garden. It will soon become part of a new urban landscape.

(by R. Kuwano)

Group photo taken on the roof-top of Ohashi Junction

Schematic of Ohashi Junction (http://www.c2info.jp/ohashi-summary.php)

15th anniversary forum of the Kobe Earthquake

Fifteen years have passed since the Hyogo-ken Nambu (Kobe) Earthquake, which oc-curred on January 17, 1995, at 05:46 JST in the southern part of Hyōgo Prefecture, Japan. To mark the 15th anniversary, 14 academic groups organized a commemoration forum at the international congress center in Kobe. Its purpose was to look back on past activities, clarify the role of the academic groups, and determine future courses of actions, including research and communication with society.

In the keynote speech, Prof. Kenzo Toki (Ritsumeikan University) gave a lecture on the fire seismic hazard and also on cultural heritage; following that, Prof. Masanori Hamada (Waseda University) gave a presentation on the role of research institutes after the Kobe Earthquake and reducing future seismic risk.

During the panel discussion, topics such as the problems before and after the disaster, ideal disaster prevention education, and the means for announcing research results to the public were discussed. The director of ICUS, Prof. Meguro, was a member of the panelists.

In Kobe, around 20 percent of the current population did not experience the Kobe Earthquake. Therefore, problems related to disaster prevention education including its implementation were discussed. Another discussion pointed out that the researcher's activities may not be easily understood or distributed to the society, yet it is important to get social feedback regarding the research and the effectiveness of the education methods.

(by M. Numada)

During the panel discussion

Ground-breaking ceremony of BUET-JIDPUS

Unveiling of the foundation stone of BUET-JIDPUS

Dignitaries at the opening ceremony

The ground breaking ceremony of the Bangladesh University of Engineering and Technology (BUET) and the Japan Institute of Disaster Prevention and Urban Safety (JIDPUS) was held on March 20, 2010 in the seminar room of the Information Access Center at BUET. The welcome speech was given by Dr. Raquib Ahsan, Deputy Project Director of BUET-JIDPUS. First, Dr. Ahsan introduced BUET to the invited guests, then gave a brief description and overview of the objectives of the institution: to strengthen the capacity of engineering professionals in the fields of infrastructure management and structural health monitoring, disaster management and prevention, and urban safety by developing research infrastructure, library and computational facilities; to strengthen other local agencies through training and dissemination of knowledge; to promote collaboration with other national and international universities and research organizations; and to provide testing and consultancy in the field of disaster prevention and urban safety.

In the opening ceremony, Air Vice-Marshal (Rtd.) Mr. A.K. Khandaker, Honorable Minister, Ministry of Planning, Govt. of People's Republic of Bangladesh was the chief guest. He said that Bangladesh is a developing country with a large budget deficiency for infrastructural development. At the same time, Bangladesh is highly disaster-prone, but there is no institution to monitor infrastructure development. The chief guest claimed that BUET-JIDPUS will strengthen the capacity of infrastructure development and disaster prevention.

The Japanese ambassador, his Excellency Mr. Tamotsu Shinotsuka, was also invited as a special guest. He discussed the relationship between disaster management and infrastructure development. He believes that this new institution will help improve the infrastructure in Bangladesh through research and practical experience. Prof. Taketo Uomoto, Professor Emeritus, the University of Tokyo and Mr. Takao Toda, Chief Representative, JICA were other Guests of Honor.

Prof. A.M.M. Safiullah, Vice-Chancellor of BUET was the chair for the ground-breaking ceremony. He said that Dhaka is a megacity for which urban safety is a necessity, and it is of great importance to give more priority to this sector. He addressed this institution as the first-ever capable of monitoring urban safety issues in Bangladesh. The chair of the ceremony also added that BUET-JIDPUS will boost the capacity of people in construction, disaster prevention and mitigation, and that this institution will carry out research activities for assuring quality infrastructure development. Finally, the chief guests unveiled the foundation stone of BUET-JIDPUS.

(by M.A. Ansary, BNUS)

Workshop on urban safety held at BUET

BUET-JIDPUS, in collaboration with ICUS, the University of Tokyo, organized the Workshop on Urban Safety from March 20 to 21, 2010, at the BUET Information Access Center. This was the first such workshop organized by BUET. Fifty five participants from several institutions attended this workshop, mainly from the civil engineering, architectural, and urban planning fields. Four researchers from BNUS (Md. Kamruzzaman, Md. Saidur Rahman, Ripon Hore, Sharmin Ara) also participated.

The workshop was divided into six sessions with lectures given by experts on the subjects of urban safety issues and disaster management. Prof. Kimiro Meguro, Director of ICUS, presented "Towards Implementation of Disaster Safer Built Environment." This lecture consisted of two issues: "implementation of earthquake safer housing by combination of technological and social approaches" and "integrated disaster information system and information management."

Mr. Yasuyoshi Ichihashi, visiting professor of ICUS, presented "Framework/Mechanism of International Cooperation for Disaster Risk Reduction and Japan's Contribution." This lecture briefly reviewed the process and accomplishments so far in the title areas, focusing on Japan's contribution.

Prof. Haruo Sawada, professor of ICUS, presented "Global Changes and Disaster Events Observed by Satellite Remote Sensing." Primary knowledge on remote sensing, its application in the field of land use change detection, disaster management and global climate change were covered in this lecture.

Prof. Taketo Uomoto, Professor Emeritus, the University of Tokyo also delivered a lecture on "The Importance of Overall Evaluation of Civil Structures to Maintain Safety." The lecture explained what sort of problems are faced by structures such as buildings, tunnels, and roads and what kind of maintenance is required for reinforced concrete structures. Different practical examples were also given to show the overall situation in Japan. This lecture was intended to help the concrete engineers who are trying to design, construct, and maintain concrete structures.

Another lecture was given by A.S.M. Woobaid Ullah, Professor, Department of Geology, University of Dhaka, on "Geophysical Survey." In this lecture, he gave different information on geophysics, methods of geophysical survey, techniques of geophysics, and implementation in the field.

Prof. Mehedi Ahmed Ansary, Project Director of BNUS, presented a lecture on "Recent Earthquake-Related Activities in Bangladesh (1996-2008)." This was the last session of the workshop and, in this lecture, he discussed activities and research undertaken in recent years in Bangladesh related to the title topics. He also gave a short description of the ongoing and completed research activities conducted by BUET.

Finally, certificates were given to the participants of the workshop by Prof. A.M.M. Safiullah, Vice-Chancellor of BUET.

(by M.A. Ansary, BNUS)

Group photo of workshop participants

BNUS Activities

BNUS has been busy with several research projects. The first is evaluation of the seismic vulnerability of buildings in Dhaka using non-destructive tests such as FERROSCAN and Microtremor. These methods were applied to establish the configuration and response behavior of the investigation's target structures.

Another investigation is being conducted to evaluate the fire-fighting system in high-rise buildings in Dhaka in cooperation with the Department of Fire Service and Civil Defense. The purpose of this investigation is to check the existing fire systems as well as raise awareness about fire hazards and earthquake-related issues among people.

Research activities funded by the Ministry of Science and Information Technology include a project focusing on urban vulnerability to earthquakes in unplanned areas in old Dhaka and structural health monitoring of reinforced-concrete bridges in Bangladesh.

(by M.A. Ansary, BNUS)

Order of the Rising Sun to Dr. Tsuneo Katayama

Dr. Tsuneo Katayama received the honor of the Order of the Rising Sun (gold rays with neck ribbon) from the Japanese government. He graduated from the University of Tokyo in 1962, received his Ph.D. from the University of New South Wales, and served as director of INCEDE (predecessor to ICUS). This honor is the result of his continuous contribution to establishing friendship and scientific communities around the world. His research field is very wide, spanning the fields of social and safety systems engineering considering materials, disasters, maintenance, and more. He often attended international workshops held by ICUS and is a collaborator with IIS. He is now working for the Tokyo Denki University in the Department of Architecture. We congratulate him on this prestigious decoration.

(by K. Meguro)

Prof. Katayama (third from right)

ICUS Activities

- *Prof. Meguro, Prof. Sawada, and Visiting Prof. Ichihashi vi-sited Bangladesh from March 17th to 22nd for a ground-breaking ceremony and workshop on urban safety at BUET.*
- *Prof. Meguro went to Indonesia from March 12th to 16th to promote low-cost retrofitting methods.*
- *Prof. Sawada had a meeting with the Cambodian Forestry Administration, a research meeting at AIT, and conducted field research in last December and February.*
- *Prof. Sawada also attended an international workshop in Beijing from February 26th to 28th, and also visited RNUS and GISTDA from March 22nd to 25th.*

Awards

- Mr. Makoto Hosoo, graduate student of Kuwano Laboratory, received the Best Presentation Award at the 44th annual conference of the Japanese Geotechnical Society.
- Mr. Kotaro Sakurai, graduate student of Meguro Laboratory, received the Best Presentation Award at the 7th annual international conference on Urban Earthquake Engineering.

Editor's Note

During the period of this volume, there were many events held to commemorate the 15th anniversary of the 1995 Kobe Earthquake. As reported on pages 6 and 7, I was in Kobe from the morning of the day of the earthquake and had a formative experience as disaster researcher. I was 32 years old at that time and I gave the name 'Nozomi' to my first daughter who was born one month after the Kobe Earthquake. Her name "Nozomi" means hope in Japanese and I chose it because I wanted her to live a life of hope and give hope to others. I strongly recognized the importance of hope for life as I saw many people who couldn't find hope in the affected areas.

Soon after coming back from Kobe, I prepared INCEDE Newsletter, Special Issue, and distributed it all over the world. Also we established KOBEnet and KOBEnet room to support recovery activities through information sharing, and many people from Japan and more than 500 people from 34 countries visited it. We received many thank-you letters from those countries who improved their disaster systems using the information collected from KOBEnet. Korea, reported in the main article of this volume, is one of the typical examples.

Fifteen years is a relatively long period, but the time since the Kobe Earthquake has passed quickly, and my working period left at the University of Tokyo before retirement is less than that. Now Japan has entered a high seismicity period, and we may have many big earthquakes in the near future. Considering the current situation and the time remaining to me at this university, I keenly feel the importance of efficient use of time and selection of research topics and activities for disaster reduction to let people have lives with hopes, 'Nozomi'.

(By K. Meguro)

Call for papers: USMCA 2010 (Kobe, Japan)

The 9th International Symposium on New Technologies for Urban Safety of Mega Cities in Asia (USMCA 2010) will be held in Kobe, Japan, on October 13th and 14th, 2010. The symposium is co-organized by ICUS and the United Nations International Strategy for Disaster Reduction (UNISDR), and marks the 15th anniversary of the Kobe Earthquake of 1995 and International Day for Disaster Reduction on October 13th. The deadline for abstract submission is June 30, 2010. Please visit the ICUS website for more information.

If you would like to contribute an article to ICUS newsletter or have any comments or suggestions, please contact the editorial committee at icus@iis.u-tokyo.ac.jp. Any article within the scope of urban safety engineering and management will be considered for publication after internal peer review by the editorial committee. To know the scope of ICUS activities, please visit ICUS homepage at http://icus.iis.u-tokyo.ac.jp/

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