



Japan Society of Civil Engineers International Activities Committee Newsletter

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Vietnam Section

Yotsuya 1-chome,
Shinjuku-ku, Tokyo
160-0004 JAPAN

Tel: +81-3-3355-3452
Fax: +81-3-5379-2769
<http://www.jsce-int.org>
iad@jsce.or.jp

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JSCE - A Hub of International Civil Engineering Community



HIROTANI Akihiko

Fellow, Vice President, JSCE

President, ACK Group

President, Japan Civil Consultants Association

Member, Executive Committee, FIDIC

JSCE has been a hub of international civil engineering community, since its foundation in 1914. There are many kinds of hubs in the world for culture, industry, discipline, region, etc. The hub function of JSCE has definitely been one of those.

A new era of modernization in Japan begun with the emergence and establishment of the Meiji Government in 1868. The utmost importance and urgency at that time was recognized to import advanced technology and engineering from overseas. Many engineers in every discipline were invited to stay in Japan and transfer technology and engineering to Japanese personnel. All sorts of advanced technology converged in this country by utilizing the hub function at the time.

Engineers then soon recognized an acute need of information collecting, sorting and spreading among themselves as well as between foreign expatriates, in other words, a hub function. The Japan Federation of Engineering Societies (JFES) was founded in 1879 as the first engineering organization in Japan, with a mission to foster the advancement of engineering technology and industry through cooperation of membership organizations. It is now the only incorporated organization consisting of over 100 engineering societies (including several scientific societies). The hub function of the JFES for engineering community is very apparently an inherent character and to be transmitted to all the member associations. The behavior which started as domestic activities soon became international.

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Many of the personnel who contributed to founding the JFES were civil engineers. They remained at the JFES until witnessing the steady establishment of the organization while other disciplines founded separate organizations and left JFES. The Japan Society of Civil Engineers was the last among major starting up disciplines to be founded in 1914. Since civil engineers were the main stream of the JFES until then, the inherent character as the hub of international civil engineering community remained as one of very important activities of JSCE.

In the globalizing world, it is fundamental to collaborate and exchange information with international counterparts to better serve the members and the civil engineering profession and to contribute to building better infrastructure, a better quality of life for the present and future societies. Hereinafter, some of activities of JSCE are presented to show how it is behaving to fulfill the duty of hub of international civil engineering community.

Seminar and Workshops

Many seminars and workshops with JSCE's involvement are held every year in Japan and overseas.

When those events are held in Japan, many Japanese as well as foreign guests attend and/or act as speakers, presenters, moderators, etc.

International sessions during JSCE Annual Meeting are very unique opportunities to exchange civil engineering ideas and information and also to discover some of the most important innovations in civil engineering technology, research and development in the world. Leaders in civil engineering research and technology from countries come to these sessions to learn about and help shape the future of civil engineering design and construction and business practices.

The International Summer Symposium is held every year since 1999, and is also a unique opportunity to exchange ideas and most recent information in civil engineering in a friendlier atmosphere.

Joint Seminars are held in a concept that JSCE has an Agreement of Cooperation (AOC) with 26 counterpart societies/institutions around the world. Based on the AOC, JSCE and the counterparts organize joint projects, exchange technical and scientific information and work together to solve global issues with civil engineering perspectives.

The Asian Civil Engineering Coordinating Council (ACECC) was created in 1999, lead by successful similar conferences which started in 1998 on a triennial basis. The purpose of ACECC is to schedule Asian forums where worldwide members of the civil engineering profession may jointly develop programs of coordination and mutual action in designated

matters affecting the interests of civil engineers and related professions. Up to now, ACECC consists of ten members including ASCE, CICHE, EA, HAKI, ICE(India), JSCE, KSCE, MACE, PICE and VIFCEA

Publications and films

Publications include civil engineering specifications, JSCE guidelines and journals. Newsletters are published approximately four times a year and have now 33 volumes. Civil Engineering started yearly publication since 1960th and has now 45 volumes. There are approximately 450 films and of which less than 20 are in English.

Other activities

The JSCE International Chapter was established in June 2000 to contribute to the international community by conducting civil-engineering related activities in countries and regions outside Japan. As one of the activities of the Chapter, the JSCE International Sections have been set up in such countries as Taiwan, Korea, U.K., Mongolia, Turkey, Indonesia, Thailand, Philippines and Vietnam to strengthen local ties by participating in local events, as well as promoting the development of civil engineering technology and skills through closer personal acquaintance and cooperation among engineers of various nationalities.

TCCE - JSCE/TR Section - JSCE Joint Symposium on Concrete Engineering

The JSCE concrete committee has held joint seminars with several Civil Engineers' Societies foreign countries, with which JSCE has an agreement for collaboration. In the past, the joint seminars with CICHE (Taiwan) and MACE (Mongolia) at 2005, VIFCEA (Vietnam) at 2006, KSCE (Korea) at 2007, SVR (Sweden) at 2008, and TCG(Greece) at 2009 were held in Asia and Europe and the strong collaboration with partner societies has established.



▲ Opening Speech by Prof. HASGÜR

In this year, the TCCE (Turkish Chamber of Civil Engineers) - JSCE Turkey Section - JSCE Joint Symposium was held on 9th June 2010 at Istanbul Technical University, Istanbul, Turkey.

The symposium began with the opening speech by Prof. Dr. Zeki Hasgür who is JSCE Turkey section president and professor of Istanbul Technical University. The importance of collaboration between JSCE and TCCE was talked, because Japan and Turkey experienced the loss of many human life and damage of many concrete structures due to Kobe earthquake in 1995 and Izumit earthquake in 1999, respectively.

The theme of this seminar was "New developments in Concrete Engineering". Based on this theme, nine topics relating to recent research and standards (four from JSCE and five from TCCE) were presented. More than 80 participants attended the symposium and actively engaged in discussions. We could share each other's experiences and improve in our research and application fields.

The topics presented in the symposium are the followings.



▲ Symposium Room

High Performance Fiber-Reinforced Cement Based Composites and their applications
Mehmet Ali TAŞDEMİR (Istanbul technical University)

JSCE Recommendations for Design and Construction of Ultra High Strength and Stain Hardening Fiber Reinforced Cement Composites
Yuichi UCHIDA (Gifu University), Gregor FISCHER, Yoshihiro HISHIKI, Junichiro NIWA and Keitetsu ROKUGO

Durability Issues in existing RC buildings and new infrastructure project
Yılmaz AKKAYA (Istanbul technical University) and Nurettin DEMİR (Nurol JV)

Durability Design and Maintenance Planning of Concrete Structures in Coastal Environment Specified in JSCE Standard Specification
Koji TAKEWAKA (Kagoshima University)

Seismic Safety Evaluation of Existing Buildings (Principles of the Code and Training of Turkish engineers)
Zekai CELEP (Istanbul technical University)

Advancement of Seismic Performance Evaluation Methods of Concrete Structures after Kobe Earthquake
Hikaru NAKAMURA (Nagoya University), Yoshihito YAMAMOTO and Yasar Hanifi GEDİK

Effect of Concrete Quality for the Seismic Performance of RC Buildings
Zeki HASGÜR (Istanbul technical University), Beyza TASKIN and Ulgen MERT TUGSAL

Failure Mechanism of Old and New Type RC Columns after Reinforcement Corrosion
Caglar GOKSU (Istanbul technical University), Alper İLKİ and Nahit KUMBASR

Impact-Elastic Wave Methods for Non-destructive Evaluation of Grouting Condition in Tendon Ducts in PC Structures
Toshiro KAMADA (Osaka University), Shinya UCHIDA and Toshiki IWASAKI

(Prof. NAKAMURA Hikaru, Member of Concrete Committee, JSCE (Nagoya Univ.))



▲ Key members in the symposium

19th Executive Committee Meeting of ACECC and 5th Civil Engineering Conference in the Asian Region

19th Executive Committee Meeting (ECM) of Asian Civil Engineering Coordinating Council (ACECC) and 5th Civil Engineering Conference in the Asian Region (CECAR) were held in Sydney, Australia last August.

ACECC was founded in September 1999 to promote cooperation among Asian civil engineering organizations for constructing sustainable infrastructure in the region. Currently it has a membership of 10, which consists of organizations from Japan, USA, Philippine, Taiwan, Korea, Australia, Vietnam, Mongolia, India and Indonesia. ECM has the highest legislative function in ACECC and is convoked in a member country once or twice each year.

CECAR is one of the most important activities of ACECC and held every three years. The first CECAR was in Manila, and it went to Tokyo, Seoul and Taipei before Sydney. The presence of quite a few figures of high rank in governments, industries and universities in the civil engineering field of the member countries graces the conference. 6th CECAR has been scheduled already to be held in Jakarta, Indonesia, in August, 2013.

19th ACECC ECM

19th ECM was called on August 8, 2010, just before 5th CECAR. From JSCE, in addition to ACECC Committee members, Professor Kenji Sakata, President, Professor Hitoshi Furuta, Chair of International Division, and Mr. Moriyasu Furuki, Executive Director also attended ECM, to name a few. The most important item on the agenda this time was the ACECC permanent secretariat. The ACECC secretariat is located in the country that hosts the coming CECAR: the ACECC secretariat thus had moved every three years. The issue is now to keep the secretariat in one place permanently. Four members including JSCE stand as candidates for host to the ACECC permanent secretariat.

5th CECAR

5th CECAR was held jointly with Australasian Structural Engineering Conference (ASEC) from August 9 to 11, 2010. The theme of the conference was "Innovative Community." The number of participants amounted to 603, and the number of papers exceeded 300, out of which 58 were from Japan. Japanese contribution turned out to be second only to Australia.

The opening ceremony was conducted with solemnity. Since this was the first CECAR after the 10th anniversary of the foundation of ACECC, Dr. Hiroshi Okada, the first ACECC

President, had been invited to make a speech in the opening ceremony. His message was delivered by Professor Osamu Kusakabe, the first ACECC Secretary General, which was followed by the speeches of Professor Marie Bashir, the Governor of New South Wales and Mr. Paul Mitchell, the ACECC President at the time of 5th CECAR.



▲ Opening Ceremony of 5th CECAR

Seven technical sessions ran at the same time. In the session "Sustainable Infrastructure", the president of each member organization gave a presentation. JSCE President Sakata presented a paper entitled "Concrete Technology in the Era of Global Warming."

JSCE organized a special forum on "Harmonization of Design Codes in the Asian Region." This was a part of the activity of the ACECC Technical Committee 8 (TC-8), for which JSCE was responsible: the committee chair was Professor Yusuke Honjo of Gifu University. In its three-year activity period, TC-8 organized three workshops and two forums. The special forum in 5th CECAR had concluded the activity of TC-8. Nevertheless, ACECC Committee of JSCE continues to commit to the harmonization of design codes in the region through the network constructed by the TC-8 activity.

ACECC Awards

On the occasion of CECAR, ACECC gives awards to eminent individuals and projects. The former is "ACECC Civil Engineering Achievement Award." It was awarded to three persons in 5th CECAR. One of the recipients was Professor Hideo Nakamura, President of Tokyo City University, who had been nominated by JSCE. The latter award has two classes: "Outstanding Civil Engineering Project Award" is to be given to the best project and the runners-up are to receive "Civil Engineering Project Award." "Taiwan High Speed Rail Project" won "Outstanding Civil Engineering Project Award" and three projects including "Bali Beach Conservation Project" nominated by JSCE received "Civil Engineering Project Award."

(Dr. HORIKOSHI Kenichi, Chair,
Committee on ACECC, JSCE (Taisei Corp.))

Photo Report from JSCE Magazine-1 New Access to Narita Int. Airport Narita Sky ACCESS railway construction was completed.



New Narita SKY ACCESS service started on July 17. This new train service operates between Keisei Takasago and Narita Airport stations via Hokuso railway line, getting on a newly laid railway at Inba-nihonidai Station to the destination. It runs at a maximum speed of 160 km/h, which enables passengers to travel between downtown Tokyo and the airport for 36 minutes. Its effects are expected to improve the network and collaboration between the Narita and Chiba New Town areas, inducing a big leap forward in the development of Hokuso area.

The new train travels to the airport, passing through the Inbanuma- swamp, mountains and woods and allows passenger to enjoy these beautiful natural landscapes. The owner considered a priority to preserve them, and had discussions with academics and business professionals to design a railway in harmony with its peripheral environments. Then, the railway construction was carried out, in the development of airport surface access in which North Chiba Road would be built to run parallel to the railway.



▲ New Skyliner is making a trial running in a high speed

Earlier, the owner had had several meetings with the area's residents until gaining their understood and approval of that construction, which helped the owner buy up properties near the planned railway. Because of that, in just four years, the planned railway was completed and would be ready for service.

That construction was not easy, but has been done beautifully in cooperation with the commissioned contractor Japan Railway Construction, Transport and Technology Agency.

(Photos by Narita Rapid Rail Access Co., Ltd., Essay by Yoshio Kato, Narita Rapid Rail Access Co., Ltd.)

Photo Report from JSCE Magazine-2 Seismic Performance Testing of Next Generation Damage-Free Bridge Columns

National Research Institute for Earth Science and Disaster Prevention (NIED) conduct shaking table tests in order to develop next generation high seismic-resistant concrete reinforced bridge columns which could maintain their services, withstanding mega earthquakes which may exceed beyond the existing ground-motion predictions.



▲ A next generation damage-free RC bridge column placed on top of the 20m x 15m shaking table

The latest shaking table test models were the full-scale bridge columns of short polypropylene fiber-reinforced high strength mortar instead of conventional concrete ones.

In this test, those test models were shaken three times with the 100% scale of seismic motion which had been recorded at JR Takatori Station in Kobe City at the event of the Hyogo Numbu Earthquake and then three times with 150% scale of that. In spite of heavy shaking, they withstood with only minor damages. The test proved that the test models were much stronger than the bridge columns designed in accordance with the current design requirements.



▲ A bridge column designed in accordance with the design requirements in the 1970s.



▲ A bridge column designed in accordance with the current design requirements.

For the success of the test, we are much obliged to Prof. Kazuhiko Kawashima of Tokyo Institute of Technology and many others who helped us plan, produce the test models which were very close to the ideal ones we wished for and carry out tests. This success has promising prospects for next generation damage-free bridge column.

We will continue our studies to make the E-Defense technology available and affordable.

*(Photos & Essay by Manabu Nakayama, JSCE Fellow,
National Research Institute for Earth Science and
Disaster Prevention)*

Information

Event Calendar

97th General Assembly

Date: May 27, 2011

Time: 13:15-17:00

Venue: Hotel Metropolitan Edmont, Tokyo

The 13th International Summer Symposium, JSCE

Date: August 26, 2011

Venue: Disaster Prevention Research Institute,
Kyoto University, Uji, Kyoto, Japan

2011 JSCE Annual Meeting

Date: September 7-9, 2011

***International Program on Sept 7&9**

Venue: Ehime University Johoku Campus

**For more information: <http://www.jsce-int.org/>*

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