Japan Society of Civil Engineers
International Activities Committee

Newsletter

No. 31, March 2010

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Sharing Civil Engineering Technologies in Asian Region

GOTO Yoshiaki, Dr. Eng.
Vice-Chair of International Committee, JSCE
Nagoya Institute of Technology

Last June, I was nominated as a Vice Chair of the International Activities Committee (IAC) after being elected as a JSCE Director of International Affairs. My major is structural engineering and seismic engineering. In this area, I have both officially and privately participated in a lot of international activities such as organization of international conferences, international cooperative researches, publication of books and papers, and so on. Furthermore, I have supervised many international students as Ph.D candidates at my university. However, as a Vice Chair of IAC, I would like to contribute to JSCE international activities from a broader viewpoint in order to raise the global status of civil engineering and to promote the international friendship.

It is regrettable to say that the international presence of Japanese civil engineering has been diminishing recently partly due to the decrease in the public construction investment. To make the matter worse, nowadays Japanese youths are not so much interested in civil engineering. As a matter of fact, it often happens in my research area that few young Japanese researchers make presentations at international conferences. In contrast, the presentations by Chinese researchers have been increasing remarkably, accelerated by its economic development. Such being the case, I am afraid if the Japanese advanced civil technologies will not be adequately transferred to the next generation. I firmly think that the cooperation with the youths in Asian region is essential to make this technology transfer successful.

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To share the technologies in Asian region will be beneficial for its future development on the other hand. Personally, I have accepted and guided a lot of international students and professors especially from Asian region to share and transfer the technologies of my research area. However, there are many limitations to the results obtained by a personal effort. More systematic efforts will be necessary. I expect JSCE will play a central role in this regard.

Development of Japan's First Offshore Wind Turbine Electric Power Generation

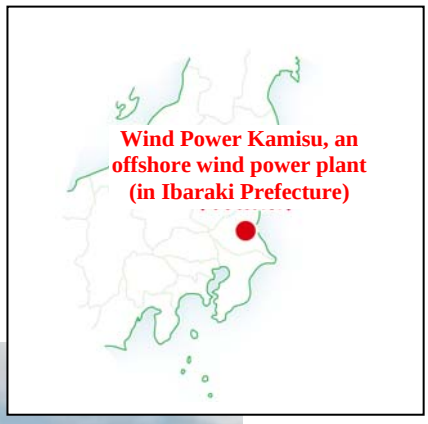
"JSCE Photo Report"
Wind Power Kamisu - the Offshore Wind Power Plant
-The experiences of civil engineers discovered the optimum construction site. Selecting the right spot is the first step toward realization of an offshore plant in Japan -

Japan's first full-scale offshore wind power plant was built in the sea near the Kashima seaside industrial zone, one of the nation's most popular industrial zones. A total of seven wind turbines (hub height: 60 m), each having an output of 2,000 kW, generate a total output of 14,000 kW, which is equivalent to the annual electricity consumption of 7,000 households.

The owner is Wind Power Ibaraki Ltd., a local business that operates three wind power plants in Ibaraki Prefecture. There are two big reasons why the plant is off the shore: wind conditions are good and stable; the effects on surrounding environments of noises and vibrations generated from the wind turbines can be mitigated. In addition, attention was focused on the site selection and construction method. The towers are in the sea about 50 m off the revetment, at a distance that allows construction work to be carried out from on the land and the maintenance operation in the same manner as on the land. Further, a monopile (3.5 m in diameter, 25.0 m tall, and 100 tons per set) was adopted for the tower foundation in the sea.

This offshore wind power plant will expand the possibilities for offshore wind power generation in Japan and play a role in attaining the carbon dioxide emission reduction target that Japan had pledged to the world.

(Photo credit and article by Mamoru Komatsuzaki, President of Wind Power Ibaraki Ltd.)



▲ Wind Power Kamisu (Photo taken from No. 1 wind turbine)

A Bridge of Dreams That Paves the Way for the 21st Century Tokyo Port Waterfront Bridge Phase II Project - For smooth flow of goods in the Tokyo metropolitan area-

Tokyo Port Waterfront Bridge Phase II is a project for the construction of 4.6 km long seaside road extending from the landfill outside the Central Breakwater to Wakasu in Koto Ward to alleviate heavy traffic congestions due to large-volume freight transport in the waterfront area.

What is striking about the project is the Tokyo Port Waterfront Bridge (tentative name.) To secure the courses for large vessels and the airspaces for the airplanes using Haneda Airport, a three-span continuous steel hybrid bridge combined with truss members and one box girder was adopted for the main bridge section (792 m long.) Because reducing the dead load is important in building a long-span bridge rationally and economically, new materials and technologies, such as bridge high performance steel (BHS), were vigorously introduced.

▲ Hoisting the truss girder on the Wakasu side, at two lift points each, using three floating cranes

The project climaxed last September; the lower truss girder weighing about 6,000 tons was erected with three large floating cranes. Because the lower truss had a varying cross section and the floating cranes had different hoisting loads, the important control points in the erection were the setting of hoisting methods and the control of hoisting loads. The fabrication and erection of all bridge girders will be completed by this October, and the bridge deck work, including paving, will go into full swing.

The bridge is slated to open in 2011 to celebrate the 70th anniversary of the opening of the Tokyo port.

▲ Launching the truss girder off the fabrication yard (Futtsu City, Chiba Prefecture)

▲ Towing the truss girder on a barge type platform (capacity: 24,000 tons) to the erection site

(Photo credit and article by Mikio Aizawa, Tokyo Port Office, Kanto Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism)

Report of Committee on ACECC

It's my great pleasure to have an opportunity to write an essay on the first newsletter of the year 2010.

Due to the recent global economic crisis after the Lehman shock of September 2008, the global construction market went into another difficult situation. Some Japanese contractors are being forced to change their overseas marketing policies based on cautious risk analyses. Japanese domestic market is still shrinking, and serious competitions have taken place.

I, as a geotechnical engineer, had an opportunity to join the highway construction project in Algeria, which is one of the major construction projects in the world. During the stay in Algeria, I strongly realized that developing countries are seeking for rapid infrastructure development that can catch up with their rapid economic growth. Japanese advanced technologies, knowledge, and experiences are highly expected to meet such strong demands.

Another point which I believe important is the technology transfer to local engineers and even the construction workers at site through the continuous education. Without such technology transfer and education, sustainable infrastructure can not be attained.

Although civil engineering is thought to be saturated and less attractive among young people in the developed countries such as Japan, we still have many opportunities to join the creation of the sustainable world, if we see the global market.

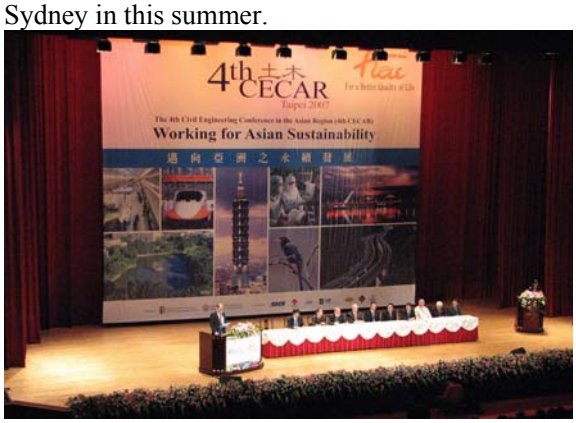
The 5th CECAR: Civil Engineering Conference in the Asian Region will be held in Sydney on August 2010, details of which is posted on the website: http://www.cecar5.com/.

More than distinguished 1000 engineers and policy makers in academic, governmental, and industrial fields get together in one place. I surely believe this conference is one of the outstanding civil engineering events in the world.

The main theme of the conference is 'Innovative Community Building'. As written on the website, the conference will give an opportunity to discuss innovative civil and structural engineering projects and to network with colleagues. Innovative Community Building will impact on a cross-section of the profession.

This conference will be a good chance to collect the latest information on innovative technologies and international markets, and to expand professional human network. The details of the conference have been on JSCE and ACECC web-site.

We are looking forward to seeing you in Sydney in this summer.



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

JSCE Study Tour Grant 2009 Report by Heng-Hsin Chang, Taiwan R.O.C.

I am very grateful and happy that I had the opportunity to be one of the students to participate in the JSCE (Japan Society of Civil Engineers) 2009 Study Tour Grant. I was glad I had the chance to visit the advance cities of Japan and look at the latest projects and technology of Japan's civil engineering.

In the six days of our Tour we were accompanied by Mr. Yanagawa of JSCE Dr. Tsuyoshi Kajima and many students of the TIT (Tokyo Institute of Technology).

The first day in Japan I arrived I had a chance to look around the streets of Tokyo.

Even though Tokyo is a very high populated city I was very happy to see a highly efficient urban public transportation system. The highly developed transportation systems truly makes Tokyo a very eco- friendly city.

JSCE head quarters Yotsuya Tokyo

In the morning we met Pro.Otsuki in JSCE head quarters. He shared with us his valuable experience of his career as being a civil engineer. He told us that we should be aware of all the dangers laying before us in our future career. He pointed out the differentials between cultures maybe a very critical manner when working overseas.

Pro.Otsuki also shared with us his ambitious dream of a floating island. An island which is capable of avoiding dangerous typhoons. An island which can serve as a major international seaport or airport. Pro.Otsuki claimed that this idea came to his mind after reading a Japanese comic book. He told us it is his life dream to make this child fantasy into a living reality. I have learned from his dream that being creative and ambitious is a very key factor of being an engineer. And we young engineers should keep on with this kind of spirit.

PWRI (Public Works Research Institute) Tsukuba city

In the afternoon we were guided by Mr.Lee from TIT, and went to Tsukuba to visit PWRI. The facility is truly large and its research cover many fields. We were first introduced to the development of IFAS (Integrated Flood Analysis System) and its applications. The system shows how Japan is helping other Countries by using it's advance technologies. Providing an early warning for countries which are incapable of getting this kind of information.

The Pavement testing facility was one of the numerous large testing facilities we saw in PWRI. The testing techniques, technology and testing methods used to create the model are very new to me. The visit to PWRI was very impressive to me. It gave me better understanding of the different kinds of pavement used in Japan.

Kajima Technical Research Institute

In this facility we saw many testing facilities such as the Wind tunnel. I believe that Japan suffers from typhoons as well as Taiwan. So whenever there is a skyscraper prepared to be built it is essential to conduct a series of wind tunnel tests to evaluate of the wind to the tall buildings and even to the surrounding buildings. We also saw the wave maker facility made to evaluate the effect of waves to underwater structures. Mr. Ikeya even let us see it in motion. And told us why the old models are not as accurate as the new ones. Throughout the research facility we also some energy saving technology such as the new air ventilation system used in the offices in Kajima. Proving energy saving techniques is a very popular topic especially nowadays

Disaster reduction and Human Renovation Institution

This is a memorial for the earth quake victims of the Hanshin-Awaji earth quake. The Museum has a re-experience room of the earth quake. Which is really unique compared to other earthquake museums. During the re-experience I felt scared and helpless. I think everyone should experience it. That way we can all get a better understanding of the devastating powers of an earthquake and know it would affect our lives. I think in Taiwan we should do the same as well. This way we can educate the young ones to be aware and be prepared for an earthquake. The museum also has many scientific experiments and shows. To show why some buildings didn't survive the earthquake and why some did. The speaker gave a very serious and also fun presentation. Museums play a very important role in civilization. They not only make us remember but also teach us of the important lessons of the pass. Which I think the DRI museum plays this role perfectly.

I was fascinated the whole trip and after the student tour I continued to travel around Japan. I went to Kyoto and Osaka for a additional 7 days. These cities all gave me very different feeling compared to Tokyo and Kobe. Especially Kyoto, this city preserves its culture and history perfectly. I could easily see traditional Japanese houses wherever I go. I think that's why Japan is so fascinating. The future and the past meet each other in many places Clothing Architecture and culture etc. The balance between them and also combination of them makes Japan a really incredible country to visit.

Last but not least, I wish to express my sincere gratitude to the following persons for their hospitalities during my stay in Japan

(Heng-hsin Chang, Tamkang University, Taiwan R.O.C.)

JSCE Study Tour Grant 2009 Report by Le Hoang Tuan, Vietnam

During this Study Tour, there are also three other students from other South East Asia countries, who was invited by JSCE to join the STG2009.

Obayashi Corporation

Obayashi head office is located in Shinagawa Intercity tower B where we met Mr. Satory Rawaguchi Deputy General Manager of Business Development Department. We have been introduced to Obayashi Corporation profile, organization, network, major work and projects on hand.

In addition, we were introduced to the capacity of the corporation from planning to project management. One of the largest projects is Hoover Biggest Arch Bridge in USA with total value of USD 114 millions. The project is to create the traffic route from USA to Canada and Mexico. The project area is Nevada State with arch size of 323m diameter

Mr. Satoru Kawaguchi introduced modern technology applied in construction of the Ppalm Jumeira Transit Systems Project in Dubai and URUP method

It was impressive to see the modern technology of Obayashi Corporation.

Akashi Kaikyo Bridge

According to Dr. Ikeya, we was seen and introduced to one of the Guinness of the modern world the longest suspension bridge. This project is very large in Tokyo with many functional units such as museum, exhibition center and the most important function is to link the islands of Honshu and Shikoku.

The bridge was built for future generations, the development of under- water construction technology structural systems capable of withstanding typhoon and earthquake conditions, the application of strong yet lightweight building materials, played vital roles in enabling construction of the Akashi Kaikyo Bridge

Himeji Castle

Himeji Castle was built in the early 17th century representing the highest achievement in the Japanese castle architecture. Designated as a national treasure in 1931, the castle was registered as the World Cultural Heritage in 1993 as the first cultural site in Japan. If you have chance to visit Kobe city you must visit Himeji Castle which is one of Japan's "Three famous castle" and the most visited castle in Japan. With tall stone foundation, white washed walls and organization of the building within the complex are standard elements of any Japanese Castle, typical castle design including gun emplacement and stone dropping holes, salt turret, oil wall, curved stone with a folding fan shape…

11th International Summer Symposium

At Tokyo Institute of Technology, I had a great honor to participate in 11th International Summer Symposium where I could learn and gain invaluable experiences in the construction industry.

The symposium was brought to a close with the Reception where there were lively ideas exchanges between the participants. The "Certificate of Excellence" was awarded.

I also had chance to present my report in the whole Study Tour Grant 2009 in 11th International Summer Symposium.

Acknowledgement

Although my visit in Tokyo was very short, I would like firstly to express my sincere thanks to Japan Society of Civil Engineer (JSCE) for giving me a big opportunity to visit Japan.

The lessons learned will be disseminated to other fellow engineers to further develop civil engineers in Vietnam.

During 6 days, I was warmly welcomed by the Representatives of all the organizations, sites and Institute, especially Mr. Hiroyuki Yanagawa and Mr. Tsuyoshi Ikeya who spent their valuable time with us during our stay in Tokyo and Kobe city.

After this Study Tour Grant 2009, I strongly believe that my visit to Japan will further strengthen cooperation between members of the engineering not only in Japan and Vietnam but also JSCE and Vietnam Federation of Civil Engineer Associations.

(Le Hoang Tuan, Phuong Dong University, Vietnam)

Call for Papers

The 12th International Summer Symposium

Japan Society of Civil Engineers

The International Summer Symposium is one of the opportunities for both international and Japanese students and engineers to share their current studies and ideas. Civil engineering students and young engineers who are interested in discussing, making exchange and networking about latest researches are strongly encouraged to take this opportunity.

- Host: The International Activities Committee, JSCE
- Venue: Funabashi Campus, Nihon University
- Date: September 18, 2010
- Registration fee: Registration fee is 2,000 yen per paper.
- Topics:
  - A. Structural Engineering
  - B. Hydraulic Engineering
  - C. Geotechnical Engineering
  - D. Planning and Design
  - E. Materials
  - F. Management and Construction Technology
  - G. Environment
- Language: English
- Important Dates

■ Deadline for paper submission with submission form *The maximum number of papers accepted is two papers per registered author.	May 31
■ Notification of paper acceptance, comments and details	Mid-July
■ Deadline for revised paper submission	Mid-August

***Note that details may be subject to change. The updated information will be notified. Please see our website (http://www.jsce-int.org).**

● Contact
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2010 JSCE Annual Meeting International Programs

JSCE Annual Meeting International Program focuses on current issues and challenges facing the civil engineering profession. All registrants of the annual meeting are cordially invited to participate in the international program. Please take this opportunity to meet and share ideas and opinions with engineering professionals from around the world. .

○ Venue：Hokkaido University, Sapporo Campus

1．International Roundtable Meeting
Topic："Compliance-Oriented Infrastructure Development"
Date：Wednesday, September 1
Time：15:00～17:00

2．4th WFEO-JFES-JSCE Joint International Symposium - Disaster Risk Management
Date：Thursday, September 2
Time：9:00～12:00

3．International Session
Date：Thursday, September 2
Time：10:25～11:55

4．JSCE-TCG Joint Seminar
（Hosted by JSCE Concrete Committees and Technical Chamber of Greece Hellenic Concrete Section）
Topic：" Standards of Concrete Technology for International Practice"
Date：Wednesday, September 1
Time：9:00 - 15:00

※ For further details, please visit the JSCE website : http://www.jsce-int.org

Information

New annual membership fees – effective April 2010.

Membership Fees (Unit: JPY)

Memberships	Country/ Region	Current [1]	New [2]
Regular Member	Those not included in either Group A or B	12,000	6,000
	Group A	8,000	4,000
	Group B	4,000	2,000
Student Member	Those not included in either Group A or B	6,000	Free [2]
	Group A	4,000	
	Group B	2,000	

***1**: Applicable to those who subscribe to the JSCE magazine
***2**: Applicable to only the members who live in the area or the country where a JSCE International Section is located and do not subscribe to the JSCE magazine

Event Calendar

96th General Assembly
Date: May 28, 2010
Time: 13:15-17:00
Venue: Hotel Metropolitan Edmont, Tokyo

12th International Summer Symposium
Date: Sept 18, 2010
Venue: Nihon University Funabashi Campus

2010 JSCE Annual Meeting
Date: Sept 1-3, 2010
*International Program on Sept 1&2
Venue: Hokkaido University Sapporo Campus

Send your comments and suggestions to: iad@jsce.or.jp
JSCE Website: http://www.jsce-int.org