Japan Society of Civil Engineers
International Activities Committee

Newsletter

No. 27, November 2008

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

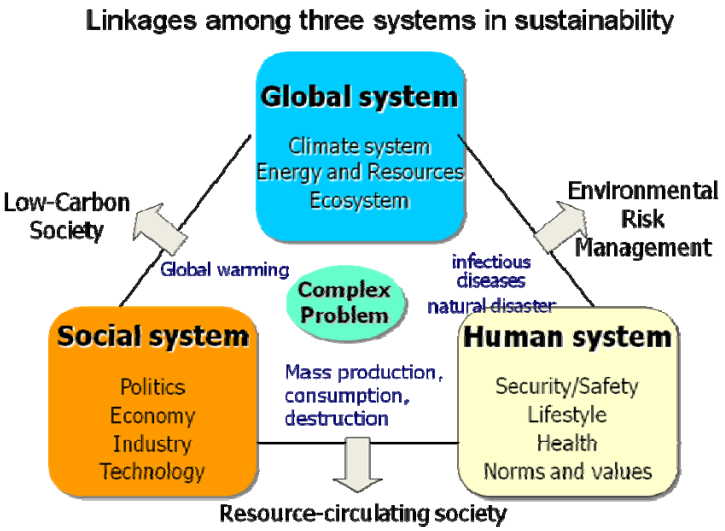
Contents

Civil engineering - Closest discipline to sustainability

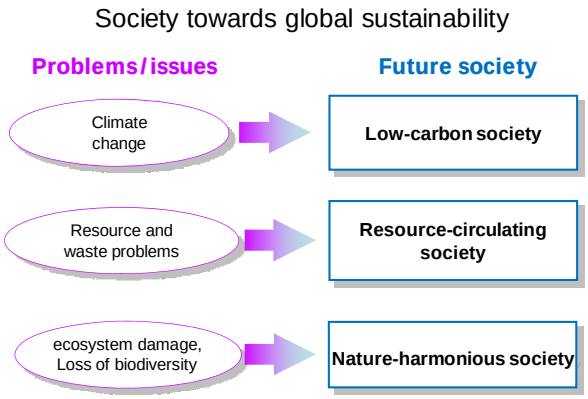
HANAKI Keisuke
Director on International Affairs, JSCE
Professor, The University of Tokyo

The concept of sustainability is a key to any discussion of the science, technology, and economics of the 21st century, the Century of the Environment. Sustainability science is a rather new, transdisciplinary discipline destined to play a fundamental role in addressing critical global issues and developing visions that can lead to a sustainable global society.

Sustainability science concerns itself with global systems comprising resources, energy, and ecosystems that support human life; social systems comprising national economies, governments, industries, and technological structures; and human systems comprising individual lifestyles, health, security and safety, and human values. Given that today's global problems arise from the close interaction among these three systems, it is particularly crucial that sustainability science focus on the linkages among these systems.



(continue page2)



Practitioners of sustainability science must therefore establish a transdisciplinary academic framework that brings together the natural sciences, social sciences, and humanities, and define and structure problems and academic inquiries to identify indicators and criteria for the sustainable restoration of global, social and human systems and their interactions.

Typical issues our society faces are climate change; resource and waste problem; and ecosystem damage and loss of biodiversity. Society as a whole needs to be change to solve these problems by forming low carbon society, resource-circulating society and nature-harmonious society.

Sustainability science must also reach out to society at large. Disseminating the results of our research to society and the individuals that compose it would help achieve a sustainable society.

Sustainability Science is an emerging academic discipline that seeks to understand the interactions within and between global, social, and human systems, the complex mechanisms that lead to degradation of these systems, and concomitant risks to human well-being and security. Being a problem-oriented discipline, it aims at proposing methods for restoring these systems and linkages, and visions for global sustainability.

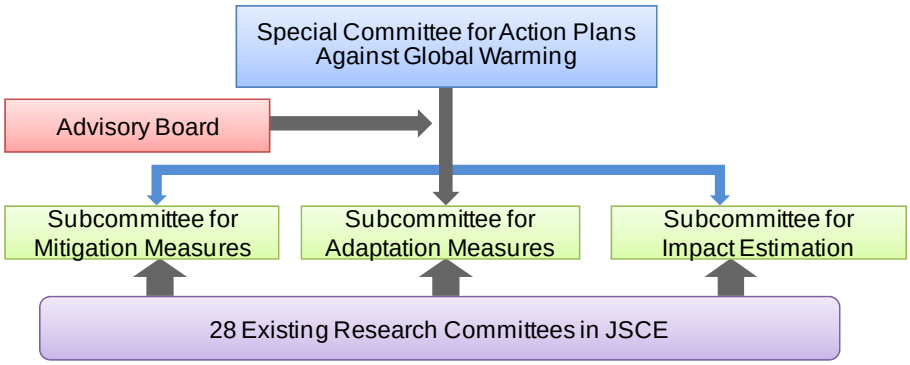
Open forum - challenge of civil engineering to climate change (July 2008)

The novelty of sustainability science lies in its approach to many of the challenges that existing disciplines have not addressed.

Among the various existing academic disciplines, civil engineering is one of the closest disciplines to the sustainability science. Civil engineering has been developing and applying technologies to infrastructure with consideration of society and human being. Overall land use planning, environmental and social improvement of life of people both in the developed and developing world are also the role of civil engineering.

However, the civil engineering itself needs integration within its discipline. For example, there used to be only 8 research and study committees in JSCE in 1964, but this number has grown up to 29 now. Each committee expands and deepens its study area in order to meet the social needs. Though various information technology tools have been helping the information exchange among these committees, amount of information far exceeds the capability of individual person to understand the whole.

Synthesizing the activities within civil engineering is promoted in the topic of climate change. This initiative is promoted by JSCE former president Dr. Yumio Ishii by forming a



Structure of JSCE's Special Committee for Action Plans against the Global Warming

Special Committee for Action Plans against Global Warming in 2008. Impact, adaptation and mitigation of climate change are very much related with civil engineering.

Sea level rise would influence human settlement and deteriorate coastal ecosystem in vulnerable area. Water resource management needs to take into account the future climate change.

Not only the total amount of precipitation but also its seasonal pattern and extreme events will change due to the climate change. This will influence fundamental design method based on the statistics of past precipitation. Civil engineering needs to play major roles in the adaptation to this future threat.

The mitigation of climate change, namely reduction of greenhouse gas emission is very much related with various fields of civil engineering. Though direct emission of carbon dioxide during the construction stage is not large, consumed cement and steel during construction causes induced emission of carbon dioxide. Transportation is one of the major sectors of carbon dioxide in any country. Waste and biomass utilization can reduce fossil fuel consumption. Renewable energy development is also a key to reduce carbon dioxide emission. These issues are all related with the civil engineering.

Holistic view is very essential in evaluating the climate change impact, within various adaptation methods, within various mitigation options, and among impact, adaptation and mitigation. Intensive discussion within civil engineering as well as with outside people has been organized by JSCE. The special committee is working now toward a final report.

2008 JSCE Annual Meeting

The 2008 JSCE Annual Meeting was held on September 10 through 12 at Tohoku University, Kawauchi-Kita Campus, Sendai city in Miyagi Prefecture. International programs were officially announced in the Annual Meeting program and drew attention from attendees at the event.

The international programs, consisted of Roundtable Meeting as a main event, Panel Discussion ACECC TC-8 Workshop and so on. There were 53 participants from abroad including 5 from JSCE's overseas sections. The details are given in the following.

The aim of the Roundtable Meeting is to share information and to find out future issues under a specific topic through information exchanging and discussions. This year's theme was "Who Constructed It?" - Civil Engineers' Revisualization of Goal and Public's Reacknowledgement of Civil Engineers' Achievements."

Dr. KAYAHARA, President of JSCE, opened the meeting with greetings and introduced that aim. Then the overseas participants gave a presentation in turn and exchanged opinions with each other.

Roundtable Meeting

Panel Discussion was carried out under the theme of "Expectations and Assistance to International Students in Japan," chaired by Prof. KAMIYAMA Makoto, Vice-Chair of the International Activities Committee. 5 panelists presented their views and opinions and exchanged with the audience.

Panel Discussion

Besides, "WFEO-JFES-JSCE Joint International Symposium on Disaster Risk Management" organized by the JFES and "the 2nd Workshop on Harmonization of Design Codes in the Asian Region" by the ACECC Committee of JSCE completed successfully.

A welcome reception for our overseas guests was held at the first night of the Annual Meeting. The participants enjoyed meeting with international colleagues in a friendly atmosphere.

Now that a series of the international programs are recognized as a part of Annual Meeting officially, we have to make more effort than before to enhance the programs to be welcomed and satisfy foreign guests as well as Japanese participants.

Finally, we would like to express our sincere thanks to all the participants, and especially to the Organizing Committee of Annual Meeting, Tohoku Chapter of JSCE and Tohoku University and all of the staff members who kindly supported us.

Venue: Tohoku University, Kawauchi-Kita Campus, Multimedia Education and Research Complex
Date: 10th to 12th September, 2008
Participants from:
Overseas Organizations: KSCE, MACE, PICE, CICHE, ACECC, WFEO,
JSCE Overseas Sections: Taiwan, Korea Mongolia, Indonesia, Philippines

Program

(1) Roundtable Meeting
Topic: "Who Constructed It?" - Civil Engineers' Revisualization of Goal and Public's Reacknowledgement of Civil Engineers' Achievements."
Date: 10th September, 2008
Participants: 86

(2) Panel Discussion
Topic: "Expectations and Assistance to International Students in Japan"
Date: 10th September, 2008
Participants: 41

(3) WFEO-JFES-JSCE Joint International Symposium on Disaster Risk Management
Date: 11th September, 2008
Participants: 29

(4) the 2nd Workshop on Harmonization of Design Codes in the Asian Region
Date: 11th September, 2008
Participants: 50

By KOHNO Shigeyuki
(Secretary General
International Activities Committee,
Shimizu Corporation)

ACECC Activity in Japan -2nd Workshop on Harmonization of Design Codes in the Asian Region-

The 2nd Workshop on Harmonization of Design Codes in the Asian Region was held on September 11, 2008 at Tohoku University during the 2008 JSCE Annual meeting. Approximately 50 engineers and researchers participated in the workshop from Korea, Taiwan, Mongolia, Philippines, Vietnam, Cambodia, and Thailand besides Japan.

JSCE has been taking the initiative for working on the possible measures for the code harmonization in the Asian region. A new ACECC Technical Committee (TC-8) on "Harmonization of Design Codes in the Asian Region" was established at the ACECC Executive Committee Meeting on June 25, 2007. The Chair of the TC-8 is Prof. Yusuke Honjo. The activity period was set at 3 years from 2007.

Terms of references of the TC-8 include 1) creation of strong human network on this issue, 2) sharing the latest information on code development, and 3) creation of glossary of terminologies for basis of design with a new concept of the performance based design.

The 2nd workshop was held for the purpose of mutually sharing the information and having discussions on international strategy by the engineers/researchers who are working on code formulation in different areas in civil engineering. We positioned the 2nd workshop as the workshop for "Direction of Future Design Code", and had discussions toward mutual understanding of the terminology for basis of design, which is based on a new concept such as performance based design. Since new members participated in the workshop, the 2nd workshop also provided them a place to share the information on their activities and strategies for formulating design code. We are glad to report that it ended with a great success.

After presentations by each delegate, the discussion session was chaired by Prof. Honjo. The followings are the main summaries of the workshop:

1) The first draft of the glossary of terminology for basis of design was introduced by Prof. Honjo. The necessity to create such glossary was approved by all the participants. The draft will be posted on the website for opinions and comments.
2) It was again realized that several design codes from different countries are used in a mixed manner in some countries. The participants realized the necessity for the harmonization.
3) Performance Based Design can be an important concept for the harmonization of design codes in the Asian Region.
4) The governmental policy accelerates such engineering society activity. Cooperation with and/or assistance from governmental side is very important.
5) It is important to invite young code drafters to TC activities for the future of code development in each country and for the creation of strong human network.
6) It was realized that some countries are very interested in leveling up theirs codes, and the performance based design concept may be the best for leveling up. On the other hand, it was also realized that some countries need their daily design codes

which can be used even from today. TC activity should consider these aspects.

At the moment, the committee is planning the next activity on April 2009 in Vietnam during the ACECC Executive Committee Meeting.

Finally we would like to thank to Kajima Foundation for the financial assistance to this workshop

Speakers and main participants at the workshop

by HORIKOSHI Kenichi, Ph. D
Chair of ACECC Committee, JSCE
Secretary of ACECC TC-8
(Chief Research Engineer, Taisei Corporation)

Report of The Tenth International Summer Symposium

The Tenth International Summer Symposium organized by the International Activities Committee of JSCE (Chair: Prof. Osamu Kusakabe, Tokyo Institute of Technology) was held at the Headquarters of JSCE, Tokyo, on September 18, 2008. The symposium is held annually so as to provide an opportunity to exchange information and ideas associated with various aspects of civil engineering among international students and engineers, including Japanese. Another objective of the symposium is to promote international exchange and mutual understanding between international communities and Japanese students and engineers. The symposium started in 1999 and has received high reputation as a valuable opportunity for exchanges among students and engineers in English. From this year, a full paper review process was introduced to enhance quality of paper. The Tenth Summer Symposium was supported by the International Scientific Exchange Fund, JSCE.

The number of attendants of the symposium was 100 (international students/engineers: 57; Japanese students/engineers: 43). This year's keynote lectures were given by Prof. Tomoya Shibayama, Yokohama National University, titled "Risk Management in Coastal Area - Protection against Tsunami and Storm Surge – " and Prof. Hanbin Ge, Meijo University, titled "Inspection Activities on Damaged Bridges in Seismic Region of Wenchuan Earthquake." These lectures served as a reference very much for the international students and help them have a vision for future.

Keynote Lecture by Prof. GE

Moreover, there were a total of 60 technical presentations from 7 areas in civil engineering (i.e., A. Structural Mechanics and Earthquake Engineering: 12; B. Hydraulic, Coastal and Environmental Engineering: 3; C. Geotechnical Engineering: 22; D. Infrastructure Planning and Management: 6; E. Materials, Concrete Structures and Pavements: 6; F. Construction Management and Engineering: 6; G. Environmental Systems and Engineering: 5). The symposium was brought to a close with the Reception where there were lively exchanges between the participants. The "Certificate of Excellence" was awarded, during this reception, to 13 speakers for their outstanding papers and presentations.
The award winners are:
Tamura Hiroshi
(Yokohama National University)
Md. Abdur Rahman Bhuiyan
(Nagoya University)
Suntoyo
(Tohoku University)
Nguyen Hoang Giang
(Saitama University)
Laddu Indika Nalin De Silva
(University of Tokyo)
Karunarathna Anurudda Kumara
(Saitama University)
Sanjay Kumar Jha
(Saitama University)
Lee Jina
(University of Tokyo)
Ahmed Ibrahem Mosa
(University of Tokyo)

Matsunaga Takako
(Saitama University)
Dorji Cheki
(Yokohama National University)
Dinh Van Hiep
(Saitama University)
Sharif Moniruzzaman Shiraji
(Saitama University)

This symposium was closed with a promise to meet again in the Eleventh International Summer Symposium to be held next year.

The award winners with Prof. Kusakabe

By YAMADA Hitoshi, Chair,
Organizing Committee of the Tenth International Summer Symposium, JSCE

JSCE Study Tour Grant 2008

Michael, J. David
Recipient of JSCE Study Tour Grant, 2008
Philippine Institute of Civil Engineers

On 10 September 2008, I had the honor of witnessing the amazing bridges and tunnel for which new technologies have been developed in order to meet Japan's strict maintenance requirements and traffic needs, given the harsh physical conditions and the limited routes available.

To emphasize the reason for innovative technology, we refer to the damage wrought by the the Iwate-Miyagi Nairiku earthquake on 14 June 2008. Iwate-Miyagi inland earthquake damages include the collapse of bridges and roads, and occlusion of waterways. With such devastating damage, there is thus a compelling need for bridges that can be constructed under adverse work conditions, that can withstand the forces of nature, be maintained on a very long-term basis in such a severe, corrosive environment, and that can provide safe and uninterrupted smooth traffic.

To meet these requirements, Japan has, among others, the following:

1. Akashi-Kaikyo Bridge

Also known as “Pearl Bridge,” the Akashi-Kaikyo Bridge was completed in 1998, and is the largest suspension bridge with center span of 1,991 meters (6,532 feet), spans at 960 meters at each side of the central span, and a vertical clearance of 65.72 meters below. The bridge was designed to withstand winds of 286 KPH, earthquakes measuring 8.5 on the Richter Scale, and harsh sea currents. The two main supporting towers rise 298 meters above sea level, and due to temperature, the bridge can expand up to 2.0 meters. The total cost of construction is estimated at 500 Billion Yen. For the bridge to last at least 200 years, a technology has been developed using “dry air injection system for main cables of suspension bridges” in order to protect the main cable from corrosion by drying the inside of main cable. To this date, there is no such similar project in the Philippines.

2. Yahagi-Gawa Bridge for the new Tomei Expressway

A hybrid cable-stayed bridge forming part of the New Tomei Expressway, and crossing Yahagi-Gawa River at 50km east of Nagoya City, the Yahagi-Gawa Bridge is 820 meters long (175 + 2 @ 235 + 175 meters), has main span of 235 meters, and is 43.80 meters wide—making it the longest four-span continuous hybrid cable stayed bridge in the world. Pylon height is 109.60 meters from the bearing level, and girder variable depth from 6.0 meters from pylon to 4.0 meters at the standard section. For aesthetic reasons, the pylon has a curved shape, simulating a drop of water -- designed to create new landscapes by harmonizing the man-made structure with nature. The bridge was constructed in four sections, with each section having been executed in different scaffolding systems. The superstructure was constructed in free cantilever method using a super-sized form

traveler. The bridge was opened to traffic in 2005, and is the world's first PC-steel composite cable-stayed bridge using corrugated steel plate webs for PC girders. No such similar bridge project yet exists in the Philippines.

3. Meiko Triton on Isewangan Highway

The Ise Bay Coastal Highway links with other regional expressways, and crosses three wide channels of Nagoya Port (Meiko). Three large span bridges, cable-stayed steel bridges comprising of three spans each: the West, Central, and East Bridges. On completion of Meiko Central Bridge, it ranks third longest cable-stayed bridge. The Central Bridge has six lanes with central reserve. The West Bridge is composed of two similar bridges parallel to each other, and carries three lanes each. One of the parallel bridges was completed in 1985, and at the time was the world's longest cable-stayed bridge span. The Meiko Central Bridge, completed in 1995, consumed 8,600 tons of steel. It has a tower height of 190 meters. The East Bridge is the continuation of West and Central Bridges, and completes the Meiko Triton.

4. Wangan-Kisogawa Bridge at Mie Prefecture.

This bridge is 275-meters long, and was completed in 2001. It uses the technology of extradosed bridges, and among PC Bridges of the same scale, it is more economical than a cable-stayed bridge.

5. Kajima Technical Research Institute

This institute, owned by Kajima Corporation and located in Tobitakyu2-chome, Chofushi, Tokyo, performs extensive research and development, mainly developing and utilizing machines/simulators and other such technologies.

6. Shield Tunneling

Located in Tokyo and constructed by Obayashi Corporation, it uses the Tunnel Boring Machine, and has a length of 861 meters. The project was started in 2003 and will be completed in 2012.

7. Taisei Rotec Asphalt Plant and Recycling Plant

The plant has a capacity to produce a maximum of 180 tons of asphalt per hour, 60% of which is derived from recycled materials, and 40% from raw materials. Almost 100% of the construction waste material can be recycled.

I would like to express my deep appreciation first and foremost to JSCE for this extraordinary opportunity, and to the different contractors and members of JSCE, who have so generously provided me the opportunity to get a glimpse of the results of Japan's pioneering efforts both in the design and construction methods for bridges and tunnels. It has been quite a privilege to have seen firsthand the application of innovative construction and management technologies in Japan, and with the cooperation of our newfound friends, may this experience spur the growth of Philippine-Japanese long-span bridge, tunnel projects and new technologies.

International Workshop on the official Tsunami Hazard Map held at Andalas University, Padang, Indonesia, 25-26 August 2008

By IMAMURA Fumihiko
Prof. of DCRC, Tohoku University

The series of earthquakes followed by tsunamis have widely generated in Indonesia and other countries especially after the 2004 Sumatra earthquake and Tsunami. The seismic activity in Indonesia should be still high because of seismic gaps remaining in Sumatra and Java islands. The Padang city, regional center in the west Sumatra with the high population of one million, is located on coastal area lying lower land in the front of one of seismic gaps in the Sumatra. International Workshop on the official Tsunami Hazard Map in Padang and International Seminar on Earthquake and Tsunami were held at Andalas Univ., Padang Indonesia, 25-26 August 2008 organized by JSCE, Andalas Univ., MMAF, Padang city, and NGO Kogami

Speakers at the workshop

Many efforts in Padang are on going in international/national and local level to reduce the tsunami impacts, one of those is risk assessment to know and understand the potency of negative impacts caused by coastal disaster. However, an official hazard map for tsunami is not yet finalized. Many parties and agencies produce different tsunami hazard map, causing confusions among the people. In this workshop, experts and professors invited from Indonesia, Germany, USA, NZ and Japan presented the state of the arts and discussed the issues. At the end, the following would have been achieved:

1. Information on the existing efforts, intended applications, method, and approach in tsunami hazard mapping for Padang City including compilation of agencies and contact persons
2. Experts analysis of challenges, gaps and recommendations to develop an official map.
3. User/local stakeholder and government analysis and recommendations for the need and application of official hazard map
4. Scenario on submarine earthquake (location, magnitude), dislocation parameter, and tsunami height based on scientific input and analysis.

The DVD "Living in Cold Regions in Japan: Disaster-Prevention Measures and Civil Engineering Technologies played at G8 Hokkaido Toyako Summit, 2008

JSCE Hokkaido Chapter

G8 Hokkaido Toyako Summit was held on July 7 to 9 this year and not only G8 leaders but also media organizations and personnel came to Hokkaido. The host prefectural government set up the public-private organization Hokkaido Toyako Summit Preparation Council to welcome summit participants. The Council opened "Hokkaido Information Plaza" in the International Media Center which provided media with necessary facilities during the event. The Hokkaido Information Plaza offered a wide range of information about the local life and culture, in which eight zones were divided by theme such as Relations with G8 Countries, Ainu Culture and Winter. Of the eight zones, "Winter Zone-Enjoy Winter" exhibited the wisdom and ideas of people living in very cold and snowy areas, and we the JSCE Hokkaido Chapter contributed the DVD "Living in Cold Regions in Japan: Disaster-Prevention Measures and Civil Engineering Technologies" to be played during the summit period from July 5 to 10. This DVD, which we had produced to commemorate its 70th anniversary, showed civil engineers' efforts and technologies to deal with freezingly cold winters and heavy snow.

In 1956 "the Special-Measures Law for Ensuring Road Traffic in Cold and/or Snowy Regions, so-called the Snow and Cold Law" was enacted in Japan. Since then, snow removal machinery and technology have been developed significantly and public snow removal services have been provided in consideration of people's daily lives. The DVD explains the establishment of the above law, the snow removal machinery, technology, devices and facilities developed in cold, snowy areas, focusing on roads, railways and electric power lines. It also introduces unique approaches to snow-related phenomena such as methods of leveling unevenness and heating points on railways, measures and devices against snow and ice accretion on power lines, road surface checking systems, GPS locator equipped with snow removal machinery, facilities to provide drivers with the information of weather and road surface condition.

Seeing positive reactions to the DVD played during the Summit, we realized that playing it was effective to introduce the civil engineering technologies to protect people's safety in the cold, snowy areas, and hoped for more opportunities to show it so as to share those technologies with the people who live in northern regions and countries with similar climates to Hokkaido.

By NANASAWA Kaoru,
Secretary Genera of JSCE Hokkaido Chapter
(Manager of Hokkaido)

2008 JSCE -KSCE Joint Seminar

JSCE Seibu Chapter

2nd Joint Seminar 2008 between JSCE Seibu Chapter and KSCE Pusan-Ulsan-Kyungnam Sections was held at the 50th Anniversary Memorial Auditorium on Kyushu University Hakozaki Campus on August 28, 13:30 to 17:30.

Fifty students and researchers from Japan and thirty from Korea participated in that joint seminar. They presented their papers and exchanged each other's views and opinions, which showed their enthusiasm and commitment to the civil engineering profession. Through the discussions, they learned from each other, gained something useful, and also were inspired to pursue further studies and researches.

Following the discussions, a reception was offered at a restaurant on the second floor of the auditorium. The symposium participants enjoyed meeting old and new friends in a free and relaxed atmosphere, which was quite different from the atmosphere they had in the discussions earlier. During the reception, the JSCE and KSCE exchanged gifts: JSCE gave KSCE fans, one of traditional Japanese crafts and KSCE returned the other with a Pusan local specialty the bottles of fruit wine. This gift exchange might indicate the start of mutual communication beyond technical exchange between these two parties. Both parties' leaders promised to work together for successful joint seminars in the future. When the reception approached the end, Mr. Makoto Uemori of Fukuoka- Kitakyushu Expressway Public Corp. conducted the participants to do hand clapping which was a Japanese custom to close an event. They performed the hand clapping in a style of Hakatashu Ippon in sync, which sounded crisp and clear. The joint symposium concluded at 20:00.

Exchanging Gifts

Next day, Friday, the 29th, the symposium participants went on a field trip to visit a few construction sites. They first went to Kasegawa Dam Construction office of Kyushu Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism and then to Mitsuse Ruveil Farm, Donguri Village to take a lunch break. In the afternoon, they visited Mitsuse Loop Bridge, which opened just a few months ago, and new buildings of Hakata Station under construction last. When exchanging farewells, the KSCE party expressed kind thanks to the JSCE party for their efforts and cooperation in this event. That was the moment for the latter to become convinced of the success of the event and breathe a sigh of relief.

We greatly acknowledge Prof. of Lee Dong-Uk of Pusan National University and Prof. Kichiro Kimura of Kysuhu Institute of Technology for their advice and suggestions. The efforts and assistance of Prof. Toshifumi Mukunoki of Kumamoto University working for Seibu Chapter International Activities Section, Mr. Makoto Uemori of Fukuoka-Kitakyushu Expressway Public Corp., Mr. Shinobu Sano of Kajima Corp., Mr. Kakuji Shinohara of West Japan Engineering Consultants, Inc., Prof. Shozo Nakamura of Nagasaki University and Mr. Tsuneyoshi Nishida of Daiichi Fukken Co., Ltd. are appreciated. We are deeply grateful to them all for their support and cooperation. Thank you again.

By ITO Keitaro, Head of International Activities Section, JSCE Seibu Chapter (Assoc. Prof. of Kyushu Institute of Technology)

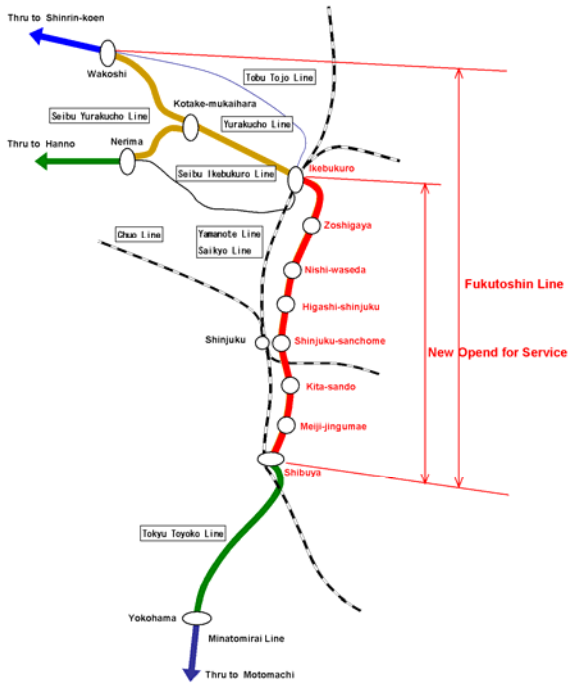
Project Report
Fukutoshin Line of Tokyo Metro Opened for Service

The 20.2-km Fukutoshin Line between Wakoshi and Shibuya Station was opened for service on June 14, 2008. This became the ninth line operated by Tokyo Metro.

The Fukutoshin Line includes a section between Wakoshi and Kotake Mukaihara stations, which opened in 1987. It also includes a section from Kotake Mukaihara Station to Shinsen Ikebukuro Station, where operation began as a quadruple section in 1994, and the last section between Ikebukuro and Shibuya stations. Construction on the last section, which is 8.9 km, started in June 2001.

Opening of the Fukutoshin Line allows reciprocal through-service with the Tobu Tojo Line at the Wakoshi station and with the Seibu Yurakucho Line and Ikebukuro Line at the Kotake Mukaihara Station. In 2012, the same type of reciprocal through-service will be provided with the Tokyu Toyoko Line at Shibuya and, via this line, with the Yokohama Minatomirai Line. In this way, a wide-area network will be established, connecting the northwestern part of Tokyo and the southwestern part of Saitama Prefecture, through three sub-centers, to Yokohama in Kanagawa Prefecture.

With construction completed on the final section, the Fukutoshin Line begins at Ikebukuro Station, runs directly under JR Ikebukuro Station, Ward Road and Meiji Street, finally reaching Shibuya station.



The just-completed section runs almost parallel with the JR Yamanote Line and the Saikyo Line, connecting major bustling areas of Tokyo. The new stations on the line are the Zoshigaya Station, Nishiwaseda Station, Higashishinjuku Station, Shinjuku 3-chome Station, Kitasando Station, Meiji Jingu Mae Station, and Shibuya Station. Among these, the Zoshigaya and Nishiwaseda Stations were constructed according to the shield method, while the others were constructed according to the cut-and-cover method. Meiji Street, the boulevard included in the work area, has an extremely large volume of traffic. So, work there had to be conducted under severe conditions. Various new technologies were employed to reduce costs and alleviate the environmental burden.

The stations were designed with large spaces and high ceilings or vaults to enhance passenger enjoyment and comfort and to offer a sense of openness. Elevators, escalators, and horizontal escalators were also provided to make movement of passengers in stations easier. Platform doors were provided at all stations, which reflected a policy assigning top priority to the safety of passengers.

By MATSUYAMA Kenryo
(Tokyo Metro Co., Ltd)

Student Network
-Voice from the Students-

Infrastructure Development in Nepal: Learning from Japanese Technology

Name: Sanjay Kumar Jha
Country: Nepal
School: SAITAMA UNIVERSITY

Sustainable infrastructure development is a critical task for developing countries like Nepal and in this regard, much can be learned from Japanese technology and the way it can be used in Nepal. The basic aspects that must be considered for any type of civil engineering construction works are its proper design, appropriate technology and safety along with the environmental and socio-economic considerations; however, these aspects are not given sufficient importance in Nepal resulting in failure of some projects. In Japan, construction works are carried out giving high priority to safety and sustainability. The current highway and railway system in Japan is a very good example of sustainable infrastructure development.

So far, many civil engineers have obtained higher degrees from Japanese universities and the broad thinking developed in them while studying in Japan will be useful for infrastructure development of Nepal. Though the exact technology implemented in more developed countries like Japan may not be suitable for Nepal, the ideas of providing safety, adequate design and modification of technology to suit Nepalese conditions can be learned from Japan. In this regard, few Japanese construction companies are already involved in Nepalese construction projects and most of the projects have been successful.

As Nepal is a landlocked country, railway transportation will be a better option to solve the current transportation problem in Nepal. Due to high traffic volume and unplanned design, road transportation is not considered to be safe in Nepal. Frequent landslides along the highways during rainy season result in a loss of life and property every year. To solve the transportation problem, to a great extent, railway transportation seems a better option. Currently, there is no railway transportation system in Nepal (except a 27 km railway system operated under the cooperation of India). Though every Nepalese (in my opinion) visiting Japan might have dreamt about having a high speed bullet train (Shinkansen) in Nepal, even a local train that operates in Japan will be sufficient for Nepalese context. The government of Nepal must think about the initiation and expansion of the railway transportation and, the technology and design methods can be imported from Japan with some modifications, if necessary. I do hope that my study here in Japan will be a valuable resource for my future career as well as in contributing towards the development of my nation.

Information

Event Calendar

JSCE 2009 Annual Meeting & 64th Annual Conference

Date: September 2-4, 2009
Venue: Fukuoka Univ., Fukuoka, Fukuoka Pref., Japan
**For more information: http://www.jsce-int.org/.*

December 2008

10-14 *Innovative world of Concrete 2008 (IWC'08)*
Venue: India Expo Centre, Expo XXI Greater Noida Express Way, New Delhi, India
URL: http://www.ici-iwc08.com/

15-16 6th Asian Young Geotechnical Engineers' Conference (YGEC)
Venue: JN Tata Auditorium, Indian Institute of Science Campus, Bangalore, India
URL: http://www.ici-iwc08.com/

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

Editorial Board:
Information Subcommittee,
International Activities Committee, JSCE
Editor in chief: Dr. HORIKOSHI Kenichi
Deputy Editor: Mr. YOSHIDA Yoichi