

Vol.34

# AJCE

NEWS LETTER 2013



ASSOCIATION OF JAPANESE CONSULTING ENGINEERS  
(FIDIC Member Association)

## About AJCE

The Association of Japanese Consulting Engineers (AJCE) was established in 1974, and was approved by the Science and Technology agency of Japan (currently, Ministry of Education, Culture, Sports, Science and Technology) as a legal entity in 1977. Representing Japanese consulting engineers, AJCE is a member of the International Federation of Consulting Engineers (FIDIC).

AJCE strives to enhance the status and competence of private consulting engineers (CEs) who are independent and impartial of manufacturers, contractors and others. By doing so, AJCE contributes towards the advancement of science and technology, development of industry, sustainable considerations in built-environment, as well as the enhancement of human safety and welfare.

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“ I-Ro-Ha Cards ” is a traditional card playing game that has inherited from ancient days in Japan. The cards are composed of 47 pictures on which each card shows Japanese character, “ Hirakana ”. I-Ro-Ha is an orderly way of expressing Hirakana, similar to alphabet in English. It starts from “ I ”, then “ Ro ”, then “ Ha ” and so on. It is played by 2 to several persons. All the cards are randomly spread out on rush mat, called “ Tatami ”. A card reader reads a short phrase starting with one of the 47 Hirakanas. Players compete by picking up the card of the same Hirakana that was read by the card reader. A person who got maxim number of cards wins the game. “ I-Ro-Ha Cards ” is played with friends or family in new year period. People drink green tea while playing the cards.





# AJCE and its Activities



**Noriaki HIROSE**

President, AJCE

President, NIPPON KOEI CO., LTD

## Annual Overview in 2012

Almost two years have passed since massive earthquake and tsunami attacked eastern Japan on March 11, 2011. Although rehabilitation and reconstruction programs have been carried out in full-swing in devastated areas, many people are still forced to live like refugees in temporary housing built by the government, and hundreds of thousands of affected people remain to suffer as the local economy continues to slow down. During this period, consulting engineers provided various services for infrastructure restoration, urban planning, debris disposal management, anti-disaster measures, and evacuation planning as faithful advisors to the public authorities concerned.

We have to be prepared for the next mega-earthquakes which are likely to occur in the

southern Pacific coast of Japan. It was estimated that the arrival time of tsunami will be much shorter than what happened in 2011, thus different types of countermeasures will be required to minimize the loss of life and damage to properties and resources.

In addition to the natural disaster issue, aging infrastructures in Japan have become the main social problem in recent years, since these massive structures were constructed during the period of high economic growth in the 1950s and 1960s. Consulting engineers are required to study the actual status and propose effective and economical solutions for this challenging problem.

## FIDIC Conference

The FIDIC Annual Conference was held in Seoul, Republic of Korea last year for which AJCE sent 61 participants comprising AJCE members and their families. The keyword of the conference was "GREEN", and a lot of discussions and knowledge-sharing were made to address global environmental problems. The sources of these problems have been created mostly by the current and previous generations, therefore, we have a responsibility to hand over this planet to future generation in a better living condition that guarantees the preservation and restoration of natural and social environment. For this, consulting engineers should take a lead role in providing adequate planning, design and maintenance of economic and social infrastructures in a sustainable way. During the conference period, AJCE participated in the General Assembly Meeting of the Asia-Pacific Region of FIDIC (ASPAC).

## AJCE Annual Seminar

The FIDIC Executive Committee Meeting was held in Tokyo in May of last year. AJCE took this opportunity to provide an annual seminar which focused on the globalization of the



consulting business in collaboration with FIDIC. About 140 participants attended the seminar. In the seminar, Mr Geoff French, FIDIC President, presented the vision and mission of FIDIC, which will celebrate the 100th anniversary of its founding this year. During his stay in Japan, Mr Geoff French and I made a courtesy visit to stakeholders of infrastructure development including the Ministry of Economy, Trade and Industry (METI), Ministry of Land, Infrastructure, Transport and Tourism (MLIT), and Japan International Corporation Agency (JICA).

#### **Young Professional Exchange Program (YPEP)**

The AJCE and Consult Australia (formerly ACEA) have maintained the Young Professional Exchange Program since 1996 and more than 120 young engineers have participated in this program so far. AJCE has invited 11 Australian young engineers from nine consulting firms for a 3-week training program in Japan last year. Many of them visited the reconstruction sites where the Great East Japan Earthquake and Tsunami attacked in 2011. At the end of the program, a workshop called "Young Summit" was held to confirm the outcome of the program which was attended by more than 40 participants, including former Japanese trainees.

#### **FIDIC Contract Training Course**

For many years, AJCE has regularly provided seminars on FIDIC conditions of contract for the

Japanese construction industry. The needs for the understanding of FIDIC conditions of contract are expanding rapidly among Japanese consultants and contractors in recent years due to the global economy. AJCE has organized FIDIC training course Module 1 "Practical Use of the FIDIC Contract" and Module 2 "Management of Claims and the Resolution of Dispute" in December 2012. The lecture was given by Mr. Geoffrey Smith, accredited trainer of FIDIC. About 30 participants coming from consulting firms, contractors, law firms, and public offices attended this 4-day training course.

#### **Future Activities**

It is expected that a fast-growing economy will be maintained in emerging countries and developing countries, especially in Asia. However, authorities in these countries are struggling to solve serious traffic congestion and pollution challenges due to rapid urbanization. The preparation for an emergency response to natural disasters is deemed inadequate in many big cities in Asia. Japan has long-standing experience in coping with urbanization, pollution, and natural disasters. I believe that we, Japanese consulting engineers, should take a lead role in effectively utilizing and sharing our abundant experiences and knowledge to the people in these other countries, who have been suffering from problems of this kind in the world.

# History of FIDIC and AJCE

**Akihiko HIROTANI**

Member, Executive Committee, FIDIC  
Chairman, Oriental Consultants

**Centenary of FIDIC**

FIDIC is celebrating the Centenary of its foundation. The event will take place on 15th to 18th, September 2013, at Barcelona and details can be found at the HP address of <http://www.fidic2013.org>.

**FIDIC Establishment**(Quoting from the FIDIC Homepage)

/// in 1913, a number of consulting engineers met to discuss the possibility of forming a global Federation. The meeting was a success in that it led to the formal constitution on 22 July 1913 of FIDIC, Fédération Internationale des Ingénieurs Conseils, or later, the International Federation of Consulting Engineers. The founding principles adopted were Quality, Integrity, and Sustainability. There were 59 participants at the inaugural meeting; official delegates from Austria, Belgium, Canada, Denmark, France, Germany, Hungary, Netherlands, Russia, Switzerland, the United Kingdom and the USA. Three countries, Belgium, France and Switzerland decided to found the Federation. /// (Un-Quoting)

The Federation had maintained to be a strong voice for consulting engineers, though, due to various disturbances, it remained mostly a federation in Europe. However, a big change came after World War Two, other MAs started to

join from all over the world. The Federation had truly become the world voice.

**AJCE at the Beginning** (Quoting from the AJCE Homepage)

/// The Association of Japanese Consulting Engineers (AJCE) was established in 1974, /// and is a member of the International Federation of Consulting Engineers (FIDIC) since 1975, representing Japanese consulting engineers.

**International Consulting Engineering Industry**

Engineering technologies have kept being transferred from higher developed countries to lesser ones. So are the MAs of FIDIC expanding from higher to lesser, as witnessed by the chronicle of changes as shown in the table below. No project in these days could be carried out without involvement of local consultants. This development in the consulting industry means that the business model of any country involved has to be modified accordingly. That is, instead of utilizing many engineers from higher developed countries, more engineers from local project countries will be involved. This is in turn a capacity building for making people to understand more and more the FIDIC principles which are Quality, Integrity, and Sustainability.

**Chronicle of Changes in MA of FIDIC**

Term	Number of MAs	Number of MAs Changes in Countries/Economies of MAs
1913	3	Belgium, France, Swiss
1925	7	Germany, Holland, Poland, Austria
1935	12	Italy, Hungary, Sweden, Denmark, Norway
1945	9	Denmark, Norway, Belgium left
1955	13	England, Rejoin(Denmark, Norway, Belgium)
1965	19	Australia, South Africa, USA, Canada, Ireland, Iceland
1975	32	Luxemburg, Colombia, Malaysia, Singapore, India, New Zealand, Brazil, Hong Kong, Iran, Israel, Japan, Nigeria, Spain,
1985	45	Bangladesh, Korea, Philippines, Sri Lanka, Surinam, Kenya, Zimbabwe, Indonesia, Malawi, Zambia, Tunisia, Thailand(later left),
1995	61	Botswana, Portugal, Turkey, Finland, Egypt, Namibia, China(Taipei), Mexico, Czech, Slovenia, Uganda, Estonia, Greece, Peru, Croatia, Guinea,
2005	77	China, Nepal, Viet Nam, Saudi Arabia, Bahrain, Bulgaria, Belarus, Ecuador, Latvia, Lithuania, Morocco, Rumania, Slovakia, Azerbaijan, Bosnia Herzegovina, Venezuela
2012	94	Mali, Jordan, Kazakstan, Russia, Lebanon, Serbia, Uzbekistan, Kuwait, Sudan, Montenegro, Mozambique, Palestine, Chile, Colombia, Dominican, Peru, Thailand

## The 'Smart' Way Forward

### **Francis Kiyoshi MORIMURA**

Vice President, AJCE  
President, P. T. Morimura & Associates, Ltd.

The collapse of the Japanese bubble economy in 1991 was followed by two so-called 'lost decades' of economic stagnation. In March of 2011, the Tohoku region suffered the devastating effects of the earthquake and tsunami. These events in turn caused the accident at the Fukushima nuclear power plant which compounded our economic misfortunes. However, with the election of a new administration at the end of 2012 and the announcement of firm intentions to break away from deflationary policy and the implementation of new measures, we have begun to see stock market highs, a weakening Yen and signs of improvement in the markets. The New Year (2013) has heralded a long awaited return to optimism regarding the outlook for economic recovery.

The unstable power supply and demand following the Tohoku earthquake in 2011 generated expectations of an expanding market for renewable energy. Several major consulting engineers' firms are entering energy related markets with a focus on renewable energy, such as solar and small scale hydroelectric power generation, which have the potential to generate new business. There is growing activity aimed at a wide range of business, such as the development of large scale solar power generation (mega solar), the use of profits from power generation to support renewable energy, as well as the operation and maintenance of energy. On the other hand, there are increasing opportunities to use energy effectively, not only for enterprises but also for local governments and households.

Recently, slogans such as 'Smart cities for the prevention of global warming - building societies with stable power supplies and low environmental loads' have appeared. 'Smart cities' make use of IT to optimize the power demand network of entire regions and are attracting increasing attention. In fact, as part of the 'Smart Community Master Plan Development, an initiative by the Ministry of Economy, Trade and Industry, plans for the seven

stricken areas are now taking shape and construction work has already begun. The drive towards building smart communities is gaining pace not only in the stricken areas but throughout Japan. Since the earthquake, house builders have been increasingly offering smart houses and storage batteries for emergencies, and there is a great need for smart communities with distributed energy systems.

Creating a master plan for the seven stricken areas concerns local businesses involved in electricity and gas, cars, IT and communications and electrical appliances, as well as construction companies. From the viewpoint of community development focused on improving disaster preparedness, there is considerable interest in the 'smart community' as a way to meet the minimum energy needs of regions, buildings and households, even in the event of a power outage during a natural disaster. For this reason, the promotion of renewable energy usage has a central role in the construction industry's efforts to build smart communities in concert with earthquake disaster reconstruction and urban development.

In Tokyo, in large scale facilities (offices, hotels, commercial facilities etc. of about 140,000m<sup>2</sup>) built over the last 20 years, we have been working on improvements aimed at 'the realization of energy efficiency and power independence'. Improvements include the introduction of gas cogeneration systems to cope with power outages, the use of non-utility generation facilities to secure 90% of the contracted power at the time of emergencies, and strengthening the effectiveness of Business Continuity Planning (BCP). Developers of such facilities, while first focusing on operational performance, also need to consider the building of smart communities.

The areas affected by the earthquake of 2011 require more than simple reconstruction, and the concept of smart towns and cities offers a way forward.



## What is needed to consultants (From the field of reconstruction assistance)

**Masatsugu KOMIYA**

Director, AJCE

Executive Director, Yachiyo Engineering Co., Ltd.

In the numerous kinds of the projects which I experienced, peace-building and post-disaster reconstruction projects have left a deep impression on me. These projects require extensive knowledge and experience. In addition, unwavering toughness even in a severe environment is needed. I would like to introduce the requirements of the consultants for these projects. I hope this will help young consultants who are working in the world.

### 《Need for peace building support》

Even in the 21st century, conflicts in the world have not been eliminated. On the other hand, as the global economy continues to expand, relations between nations have become closer and closer. We should not be indifferent to the conflicts of the world as a member of the international community.

My participation in peace-building support began in Bosnia and Herzegovina for the electric transmission line rehabilitation project in 1997. Over 200,000 people lost their life in the war. It came to an end by integrating the disputed areas into one nation. The aim of my project was to promote economic recovery by connecting the transmission lines in the areas. I cannot forget my field survey experience in a mine-infested field. In the project, it was extremely difficult to harmonize views among many donors as well as conflicting parties. However know-how and lessons learned from the project are useful to subsequent activities.

### 《Efforts to support post-disaster rehabilitation project》

We can not stop large-scale disasters, such as earthquakes, tsunami and floods. I experienced large scale post-disaster rehabilitation projects, e.g., the Indian Ocean tsunami reconstruction by Sumatra earthquake of 2004. Disaster recovery is categorized by self-help, mutual assistance, and public assistance. We, consultants, mainly work on public assistance to rebuild infrastructures. Comprehensive plan of multiple sectors for urban planning, road

construction, water, sewage, electricity, etc., are required urgently. Furthermore, management ability and advanced technology are indispensable.

### 《What is needed to consultants》

Consultants who engage in reconstruction assistance around the globe will be required the following capabilities:

#### **Technical capabilities with creativities**

Creativity, in addition to expertise, is required to formulate realistic solutions by using limited information.

#### **Teamwork**

A team with several experts will be formulated to solve many challenges. In the spirit of "One for All. All for One", well-coordinated teamwork is required.

#### **Sense of responsibility**

Affected areas are generally characterized dangerous and poor environment, bad hygiene and shortage of commodities. To overcome these situations, "sense of responsibility is essential. that would contribute to the area by attracting global attention through representatives of the home country"

#### **Presence of mind and cheerfulness**

"Presence of Mind" is required to analyze the situation calmly and dispassionately. At the same time, it is important to be able to give courage to those who have lost their vitality.

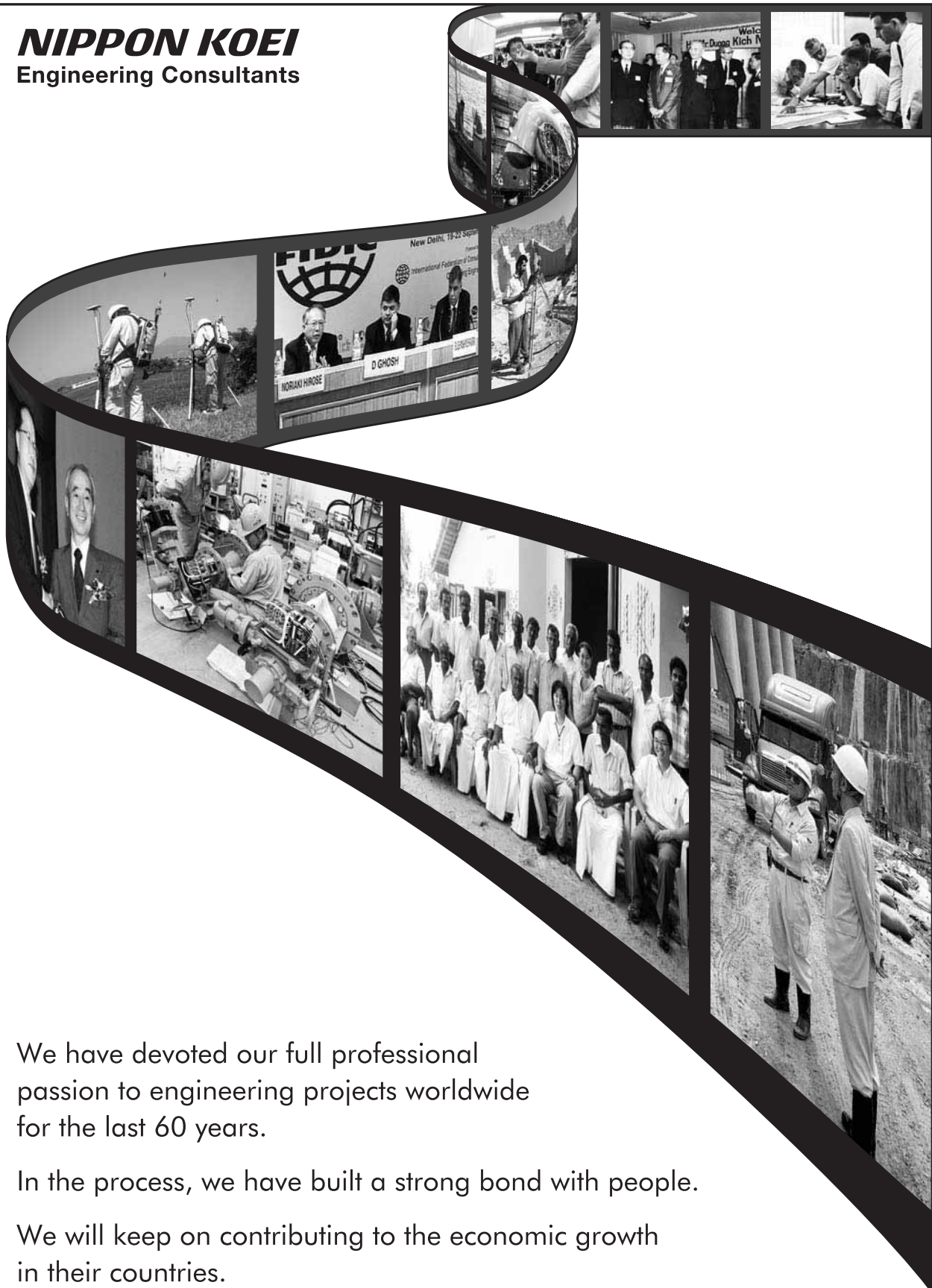
#### **Business sense to win international competition**

Consultant activity in reconstruction assistance is a kind of philanthropy. However, it is also a place of international competition. We should acquire astute sense of business to carry out the plan according to our country's policy.

Finally, the most important keyword is "**mutual trust**". It leads to successful projects. I believe "mutual trust" is also leading to world peace and it is the clue to effective reconstruction assistance projects.

# **NIPPON KOEI**

Engineering Consultants



We have devoted our full professional passion to engineering projects worldwide for the last 60 years.

In the process, we have built a strong bond with people.

We will keep on contributing to the economic growth in their countries.

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[www.n-koei.co.jp/english](http://www.n-koei.co.jp/english)

AJCE Activity 2012

**January**

**AJCE New Year Celebration Party**



**May**

**FIDIC-AJCE Joint Seminar 2012 [see page13]  
Globalisation of Consulting Services**



**September**

**FIDIC 2012 Soul Conference  
- Beyond Green- New Paradigm-**



**October**

**Young Professionals Exchange  
Programme 2012**





## July

FIDIC EC Meeting in Tokyo [see page11]

YP Award [see page9]



## November

Professional Career Development Seminar

## December

FIDIC Contracts Training Seminar



## AJCE Activity 2012

### Activity of Young Professionals in 2012

**Kazutoshi AKASAKA**

Chair, Young Professionals Sub-Committee, AJCE  
Nihon Suido Consultant Co., Ltd.

**Activities of YP sub-committee (YPSC)**

In 2012, activities of YPSC are as follows;

- 1) YP Award (Young Professionals Award) for YPs,
- 2) "Yakai", Social Networking Event,
- 3) YPEP (Young Professionals Exchange Program) organized by YPSC,
- 4) Contribution to FIDIC YPF.

**1) YP Award for YPs**

On 29th Aug 2012, the 1st YP Award contest was held by YPSC. Eight groups representing respective firms entered into the contest in which approximately 40 YPs participated as contestants. Name of participants was introduced in their

presentation to call attention from the floor. Everyone was able to share a lot of information through their presentation. It was a wonderful experience for YPs and us as an organizer.

The YP Award was given to "Activity of Landscape seminar" by CTI Engineering Co., Ltd.

**2) "YAKAI", Social Networking Event**

After the YP Award contest, a social networking event called as "Yakai" was hosted by YPSC. About 40 YPs from several companies participated and enjoyed exchange of communication among them. This event provided an opportunity to disseminate activity of YPs.



**3) YPEP organized by YPSC**

Young Professionals Exchange Program (YPEP) was established in 1996 between AJCE and CA (Consult Australia). In the past 15 years, about 130 YPs participated in the program. The trainees of YPEP are now taking major roles in the YPSC.

In 2012, for the first time, visit-training of YPEP was planned and initiated by YPSC that was carried out from 15th Oct to 2nd Nov. We welcomed 11 trainees from Australia.

At the orientation held on 15th Oct, they introduced themselves in Japanese as they were requested to study Japanese prior to the visit-





Welcome Party

training. All trainees were fantastic in introducing themselves in Japanese. As a part of training, program, they visited the Tōhoku region where devastating earthquake and Tsunami occurred in March 2011. This experience might have given them an unforgettable impact. In the second weekend of the program, they traveled to ancient city of Kyoto and Nara and experienced harmony



Farewell Party

between old and new culture there. On the last day (2nd Nov), Young Summit was held and 2 topics were discussed. In the second topic of "Market growth", the following opinions were exchanged.

- Understanding the difference between Japan and Australia in culture and business environment,
- Needs of education for marketing,
- Collaboration between Australian CE and Japanese CE., etc.

**4) Contribution to FIDIC YPF**

A member of YPSC representing AJCE YPs is serving as a member of FIDIC YPFSC to support FIDIC YPF activities.

In the 2012 FIDIC Seoul conference, many young professionals participated and they contributed greatly for supporting the operation of the Conference. We are quite certain that such contribution would enhance activities of YPs.

**For future**

In 2012, activity of current YPSC has entered into the third year. We could achieve the goals that were addressed at the beginning of our activities. But we are just standing on the starting line.

We believe it is very important to keep these activities continuously in the future. We recognize that difficulties lie in our front, too.

So, we need not hurry, progress step by step and steadily while enjoy learning more than ever.

Finally, this year's achievement was not possible without dedicated contributions by YPs and big hearted support and understanding by many seniors. We would like to thank and count on your continuous support, understanding and encouragement on our activities.



Young Summit



Farewell Party



## AJCE Activity 2012

### FIDIC EC Meeting in Tokyo

FIDIC Executive Committee (EC) Meeting was held in Tokyo on 9th and 10th May, 2012.

FIDIC EC meetings are held three times a year, the last one where annual conference is held and the remaining two in Committee member's homeland countries. This time, the meeting was held in Japan, homeland of EC Member, Akihiko Hirotani.

FIDIC EC Meeting, Courtesy visit to authorities, FIDIC-AJCE joint seminar and welcome dinner party, etc. are briefly reported in the followings.

#### 1) FIDIC EC Meeting

Date: 9th (Wed.) and 10th (Thu.) May, 8:30 to 17:00  
 Venue: Izumi Garden Conference Center  
 Attendants: 9 FIDIC EC Members, FIDIC secretariat,  
 AJCE Observers: Yoshi Yamashita, Tomoyuki Kitano,  
 YP Sub-committee member



FIDIC EC members

FIDIC EC meetings were held for two days each from 8:30 in the morning to 17:00 in the evening. Nine FIDIC EC members, Tomoyuki Kitano, representing young professional and Yoshi Yamashita attended the meeting.

#### 2) Courtesy Visit to Authorities

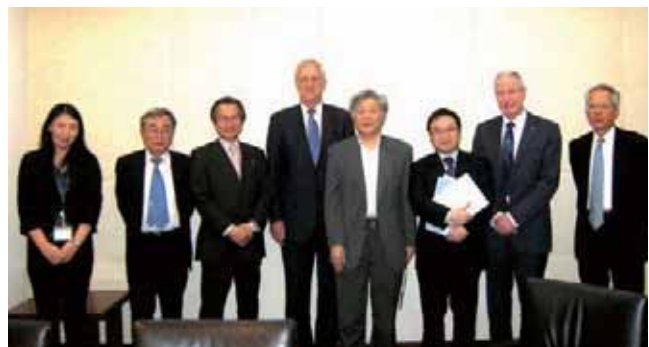
Date: 7th May, Afternoon  
 Prior to the ECM, Geoff French, Enrico Vink, Akihiko

#### Masafumi MIYAMOTO

Vice President, AJCE  
 President, TEC International

Hirotani, Noriaki Hirose, Masafumi Miyamoto and Yoshi Yamashita visited following authorities.

- Ministry of Economy, Trade and Industry (METI):  
 Director- General, Mr. Susumu Atsuki
- Ministry of Land, Infrastructure, Transport and Tourism (MLIT): Vice-Minister for Engineering Affairs,  
 Mr. Naoyosi Sato
- Japan International Cooperation Agency(JICA):  
 Vice-president, Mr. Masato Watanabe



Courtesy Visit to JICA

Geoff French talked to the representatives of the above authorities about FIDIC's mission and vision. Mr. Atsuki , (METI) made comments that cooperation and support from FIDIC is expected in capacity development, FIDIC contracts and project management.

Mr. Sato (MLIT) made comments on the recognition and importance of consultant's role on contract management and promotion of Quality Based Selection (QBS).

Mr. Masato Watenabe (JICA) also pointed out the importance of QBS and commented that cooperation between JICA and FIDIC for capacity building shall be promoted.

**3) FIDIC-AJCE Joint Seminar**

Date: 8<sup>th</sup> May (Tue.), 13:30 to 17:00  
 Venue: Hotel Le Porte Koujimachi  
 Participants: Approximately 140  
 Title: Globalisation of Consulting Services - Share the Challenge with President of FIDIC-.  
 The seminar was held by taking an opportunity of FIDIC President's visit to Japan. (Refer to the article on the seminar in this News Letter for details.)

**4) FIDIC-AJCE Joint Press Interview**

Date: 8<sup>th</sup> May (Tue), 17:15 to 18:00  
 Venue: Hotel Le Porte Koujimachi  
 At the interview, FIDIC president Geoff French stressed "Occasionally I think that Japanese consulting industry is divided into many sectors. AJCE is expected to represent strong voice for the CE industry." Responding to this, AJCE president Noriaki Hirose said that AJCE is the sole entity that is composed of members from different sectors in Japan.  
 However, due to the fact that each sector establishes own association, member firms of AJCE are only a part of each sector. Despite of this difficult situation, AJCE has been continuously exerting efforts to increase its domestic representation.



FIDIC-AJCE Joint Press Interview

**5) Welcome Dinner Party**

Date: 9<sup>th</sup> May (Wed.), 19:00 to 21:00  
 Venue: Grand Ark Hanzoumon Hotel  
 Welcome dinner party was held in the evening of 9<sup>th</sup> May. A total of 49 persons including FIDIC EC and AJCE EC Members and their spouses participated. All enjoyed joyful party.



Welcome Dinner Party

**6) Tour in Tokyo, to Nara and Kyoto**

Spouses of FIDIC EC Members visited Asakusa area, Meiji Shrine, Odaiba area and other places in Tokyo on May 9<sup>th</sup> and 10<sup>th</sup> while FIDIC EC meetings were held.  
 Tour to Kyoto and Nara was conducted from 11<sup>th</sup> (Fri.) to 13<sup>th</sup> (Sun). They all enjoyed the tour to old city of Japan.



Senso-ji Temple, Asakusa

We believe that FIDIC EC Members enjoyed the best spring season in Japan.

## AJCE Activity 2012

### **FIDIC-AJCE Joint Seminar 2012**

Globalisation of Consulting Services

~ Share the Challenge with the President of FIDIC ~

**Hiroto YAMAUCHI**

Professional Development Committee, AJCE  
Oriental Consultants Co., Ltd.

Date and Time : May 8, 2012 13:30-17:00

Venue : Royal Crystal, Le Porte Kojimachi

Number of Participants : Approx. 140



#### **Introduction**

Major global issues that people face now such as over population, urbanization, and climate change are closely linked to the fields in which Consulting Engineers (CE) conduct their business. CEs are hence expected to play a leading role in addressing the issues and meeting the ever-increasingly broad and complex demands. Inviting distinguished speakers from the public sector, private sector, and the CE industry, AJCE organized a joint seminar with FIDIC on May 8 (Tue), 2012. The seminar aimed at clarifying the roles of CEs in Japan and identifying the challenging issues to overcome for making a meaningful contribution to the society.

#### **Centenary of FIDIC-Vision and Mission of FIDIC**

**(Mr. Geoff French)**

Geoff French, the President of FIDIC, first explained

the history of FIDIC. Starting from only three member countries, FIDIC has grown to now include 1.5 million CEs of 60,000 firms located in 94 countries. In conjunction with its Annual Conference, a celebration will be held in Barcelona in 2013 to commemorate the 100th anniversary of FIDIC's foundation and Mr. French warmly welcomed the floor to participate.

Mr. French explained that FIDIC's vision and mission have recently been redefined to add more weight on its contribution to sustainable development and stakeholder involvement. In introducing FIDIC's eight objectives, he stressed the necessity of preventing corruption for ensuring integrity, a crucial element of FIDIC's policy. He also emphasised the importance of raising CEs' social status to secure talented people. Continuous effort has to be made, he said, to improve and strengthen FIDIC's contract documents.



Mr. Geoff French  
President, FIDIC



### **FIDIC's Approach towards Developing CE Industry**

**(Mr. Enrico Vink)**

Mr. Enrico Vink, the Managing Director of FIDIC, presented an overview of FIDIC's organizational structure, activities, publications and conference.

Mr. Vink shared the fact that infrastructure investment accounts for 10% of the GDP in many countries and stressed the significant contribution made by CEs in underpinning economies.

With regard to FIDIC's activities, he explained that FIDIC has been consistently placing importance on quality, integrity and sustainability. He also reported that FIDIC has been making considerable efforts in sharing professional knowledge and experience through publication, training, and international conferences. With regards to conferences, he urged participants to join the FIDIC Annual Conference held in Seoul in Sep. 2012 under the theme of Green Procurement. Towards CEs, he advised to try to flexibly accommodate the ever-changing needs of the society.



**Mr. Enrico Vink**  
Managing Director, FIDIC

### **Promoting Overseas Infrastructure Projects through Public-Private Partnership (Mr. Katsuji Hashiba)**

Mr. Katsuji Hashiba, Deputy Director General for Engineering, Ministry of Land, Infrastructure, Transport and Tourism (MLIT), first explained that ODA budget has continuously been decreasing. He stated that the budget in FY2012 (general

account; JPY560 billion) was less than half the amount of its peak year in FY1997 (JPY1.17 trillion). In the meantime, however, infrastructure development in Asia had not been able to keep up with the pace of its economic growth indicating that there is a role to play for ODA.

In terms of overseas business development, Mr. Hashiba introduced three directions: i) export of Japan's superior technologies and skills; ii) packaging strategy; and iii) Public-Private Partnership (PPP). He introduced MLIT's basic policies of: "from expansion to consolidation"; "from public to private"; and "from domestic to overseas". He explained that the Ministry has been carrying out: i) policy discussions in the project formation stage; ii) top sales in the tendering stage; and iii) establishment of a 'hotline' (consultation desk) in the implementation stage to support Japanese firms' business overseas. Mr. Hashiba also reported that MLIT provided a platform for exchanges of information and opinions between the public and private through the "Council on PPP in Overseas Road Development" and the "Council on PPP in Overseas Water Infrastructure Development". In the end, he encouraged CEs to be actively engaged in project formation.



**Mr. Katsuji Hashiba**  
Deputy Director General for Engineering, MLIT

**ODA Projects and Expectations for CEs (Mr. Kazunori Miura)**

Mr. Kazunori Miura of Japan International Cooperation Agency (JICA) shared his expectations to CEs and FIDIC in Japanese yen loan projects. He first provided a brief overview of the changes in loan projects in terms of the contract amount and regions and fields implemented. He then mentioned that JICA and FIDIC cooperate with each other in, inter alia, applying FIDIC's contract documents to JICA projects and promoting the Dispute Board.

Mr. Miura first requested CEs to properly understand and manage FIDIC's contract documents mentioning that there have been disputes in past JICA projects. He then requested FIDIC to make further efforts in: developing the capacity of a wide range of stakeholders; improving the contract documents; and playing a leading role in improving the relationship between the clients and CEs.



Mr. Kazunori Miura  
Director-General, JICA

**History of Development of Japanese CEs and Its Overseas Business Development (Mr. Akihiko Hirotsu)**

Mr. Akihiko Hirotsu, an Executive Committee (EC) Member of FIDIC and Chairman of Oriental Consultants Co., Ltd., first shared with the floor the history of CEs in Japan and emphasised that determination and actions are required to be successful overseas. He pointed out that CEs in

Japan has remained excessively dependent on their clients and hence their skills have not developed as much as they did overseas.

He emphasised the importance of being involved in all stages of project development: formation, planning, study, design, and construction supervision. He also stressed the importance of nurturing globalized human resources. He concluded by stating that it is necessary for Japanese CEs to overcome the status quo where CEs compete over specific technical components to step up into managing programs.



Mr. Akihiko Hirotsu  
EC Member of FIDIC and Chairman of Oriental Consultants Co., Ltd.

**Closing Remarks**

With the participation of the President and Managing Director of FIDIC, this seminar successfully highlighted the current status of CE industry in Japan and its future prospects. In the seminar, both business opportunities that reside overseas and various supports provided by the government in Japan were shared and so were the challenges to be addressed. We hope that the information and knowledge offered here would help those willing participants to better carry out their business overseas.

## AJCE Activity 2012

### Young Professionals Exchange Programme 2012 -A Strong Partnership of CA and AJCE-

**Keiichi KANAI**

Vice Chair, Professional Development Committee, AJCE  
CTI Engineering Co., Ltd.

Australia and Japan have been strong partners for decades in the ever-rising Asia Pacific region, which is now leading the global economy with its vast market and excellent productivity. In the consulting engineering industry, AJCE has been keeping a strong tie with Consult Australia (CA) for many years. One of the greatest achievements by these two institutions so far is Young Professionals Exchange Programme (YPEP), which started in 1996 to promote good relationship and friendship between Australian and Japanese young consulting engineers. YPEP has offered precious opportunities for more than 130 young engineers to experience foreign corporate cultures and establish human network in the past 17 years. YPEP has been highly praised by FIDIC as a good example of international training program for young professionals.

In October last year, AJCE welcomed 11 young Australian engineers who would spend 3 weeks at 6 AJCE member firms. It was a good surprise for AJCE that we had so many trainees this time (eleven is a record), after the previous year's cancellation of the programme forced by the tragic Great East Japan Earthquake and Tsunami.

The schedule of YPEP2012 was as follows:

February	Selection of hosting firms
April	Selection of visiting Australian engineers
May	Start of Pre-visit dialogue
October 15	Orientation & Welcome Party
October 27-28	Trip to Kyoto & Nara
November 2	Young Summit Meeting & Farewell Party

AJCE, when accepting trainees, requires them to read a book introducing Japan in various aspects and make a report on it, and to learn some basic Japanese so they could introduce themselves in Japanese on the first day of visit. This time we had a second good surprise when many trainees spoke fairly good Japanese in the introductory session of the orientation meeting.

After the initial ceremonial events, the trainees started their training courses at host firms. The program was planned individually by each host firm, yet this time most firms incorporated in the program a trip to the stricken area in Tohoku region. It seems that seeing with their own eyes the devastated towns and the local people's effort for reconstruction has left strong

impact in their minds. In the meantime, the trainees worked hard at their host firms according to the programs, and made many Japanese friends through countless social events (Nomikai).

The weekend trip to Kyoto and Nara, former capital cities of Japan famous for their old shrines and temples, offered the trainees a chance to explore the rich history of Japan. Also they must have found another Japanese culture in the Japanese style dinner party (Enkai) at the Ryokan hotel and the subsequent late-night Karaoke party.

On the last day the Young Summit Meeting was held in Tokyo, in which all the participants from both countries got together to share the outcome of their 3 weeks of training, and to exchange their views and opinions on some interesting issues such as the difference of work environment and systems between two countries. It was a valuable and meaningful meeting for all participants, and one of the highlights of the entire YPEP program. We had more than 40 participants for this meeting and its heat was brought into the farewell party, which was held on the top floor of a skyscraper in Shinjuku.

While YPEP's primary purpose is to provide young engineers with opportunities to touch different cultures, to learn new engineering skills, and to create an extensive network, we hope that in the future this will be growing into close business relationship between the participating firms in two countries, as mentioned in the Memorandum of Understanding signed by CA and AJCE in 1995.

We have already started preparing for this year's YPEP, in which AJCE will be sending Japanese young professionals from its member firms to Australia, and we believe that it will be another success in YPEP's great history.





## AJCE Activity 2012

### YPEP 2012 - Engineering in the Land of the Rising Sun

**Jasper Blizzard**

YPEP2012 Trainee

URS Australia Pty. Ltd.

#### Introduction

I was fortunate to be provided the opportunity to work in the Oriental Consultants Tokyo office for three weeks in October 2012 as part of the Young Professionals Exchange Program (YPEP).

#### Brief Outline of YPEP

YPEP is an annual 3 week exchange program between Japanese and Australian consulting engineers and engineering firms. The exchange provides a technical, social and cultural introduction to the host company/country whilst fostering increased cooperation and business between Japanese and Australian consulting engineering firms.

#### Brief Outline of my Training Program

During the program I was fortunate to have a combination of technical work and site visits. Technical work included creating and analysing a Finite Element Analysis model of Shin-Yokohama exit and entrance tunnel in WCMOD. The purpose of this was to perform a dynamic analysis of the structure under earthquake loading conditions. This was then compared to a static analysis of the structure that had been performed earlier.

Site visits included: A site walk of the Central Circular Shinagawa Route tunnel construction site at Ohashi Junction; Visiting the Yokohama circular northern route - Tajiri Construction site, Visiting Mito City to observe repairs to the Mito City Train Station elevated walkway and visiting the Tohoku region to observe the recovery effort from the Great East Japan Earthquake.

#### Personal Reflections

Witnessing the destruction in the Tohoku region from the Great East Japan Earthquake and Tsunami was a somber experience that will remain with me for a long time. Although the sea walls and early warning system were not as effective as intended, it is sobering to think how much worse the damage would have been if it wasn't for the high level of earthquake design requirements of the Japanese design standards. Also, it was heartwarming to see the resilience of the local people, and the entire nation, as they continue the rebuilding process.

Other memorable moments of the trip have included: visiting the central circular Shinagawa route tunnel construction site at Ohashi Junction and the sightseeing trip to Kyoto and Nara.

#### Conclusion and Acknowledgement

Participating in YPEP 2012 has been a fantastic experience. Observing the Japanese approach to engineering has provided me with many techniques that I will take back to Australia and implement in my daily working life.

I would like to thank Oriental Consultants, the AJCE, Consult Australia and URS for the opportunity to participate in YPEP 2012. It has been an absolute privilege and I am extremely grateful to Oriental Consultants for all the hospitality and kindness that they have afforded me during this exchange. I would particularly like to thank Mr Suzuki-san, Ms Wang-san, Mr Fukuma-san and Mr Hayashi-san for their day to day assistance and for putting up with my atrocious Japanese language ability! I hope that one day I can repay your extremely generous hospitality. Dōmo arigatō gozaimashita.



## AJCE Activity 2012

# A Journey of Business and Pleasure

**(Andrew) Lap-Ley Ngo**

YPEP2012 Trainee

Brown Consulting Pty. Ltd.

In 2012/10/13 I embarked on a journey to the "Land of the Rising Sun" departing from Australia. Onboard this flight was a group of Japanese high school students returning to their homeland from a visit to Australia. All were in high spirits and after 3 weeks of staying in Japan under the guidance of Soichiro HAYASHI, from my host firm, I return home with exactly the same feeling. I am very grateful and wish to formally express my gratitude to the AJCE, participating host firms, and my firm Brown Consulting for directly and indirectly supporting my endeavours in this program.

### **Business**

During my stay, I have had the privilege of being exposed to a real life project driving positive change in the built environment. Specifically, Oriental Consultants are undertaking a pilot project launched by the Ministry of Environment (MOE) involving the development of an ion-lithium battery (SCiB) for Electrical Vehicles (EVs). This technology is planned to be implemented on buses in the public transport network. The exciting prospect is that this project stands to revolutionize transportation in Japan and is also adaptable for internationally application. This of course is true to form given that it has been a long standing view that Japan are one of the world leaders in the field of technology.

Hayashi San kindly took time out of his busy schedule to guide me through the planning, development and funding process. It was insightful to see this from the perspective of a successful Japanese firm.

We also discussed current strategies for renewable energy in Japan and solar power generation. I had the opportunity to visit a solar energy field facility in Kawasaki City which was a sight to behold and was given the opportunity to observe a Council committee meeting discussing renewable energy in Saitama City.

In a more solemn note, I am deeply touched by my visit to the regions devastated by the *Great East Japan Earthquake* and tsunami. Words cannot describe how I feel so needless to say that there are no words to describe how the people of

these areas and Japan feel. The manner in which Japan are united in their resolve is a great tribute to the strength of the Japanese people and the nation. I wish Japan all the best in the recovery efforts.

### **Pleasure**

Tokyo is as fantastic as I remember from my original visit in 2004. I have become older, wiser and less wild since then and it has been great to see the progression that Japan has undertaken over this short period. There is no question that the people are kind and helpful, but the transport system during my first visit was not as friendly to me. With English now being prominent on the rapid transit system, this has come a long way to alleviating the challenges I had previously faced. It was also great to experience Japanese culture from a businessman's perspective. A lot of jovial conversations over my favourite Japanese cuisine accompanied with countless bottles of sake, beer and umeshu were rather enjoyable when discussing work life and worldly matters. My hosts from the AJCE were particularly helpful in educating me in the ways of discerning sake quality.

Hayashi San was kind enough to organize a motorbike ride to Mt Fuji where I was able to see the beauty of this natural treasure.

Once again I would like to extend my deepest gratitude to all the people who have helped me along this brief but enriching journey and I highly recommend that young professionals take on this opportunity in the future. I would especially like to thank Soichiro HAYASHI and the Oriental Consultants team for investing their time in me and this program. I look forward to reuniting with them in the near future for *business and pleasure*. *Domo Arigato Gozaimasu*.



## AJCE Activity 2012

### My YPEP 2012 Experience

**Claire Miller**  
 YPEP2012 Trainee  
 AECOM

#### Introduction

During my participation of the YPEP program organised by the AJCE, I was fortunate to spend my time with members of the substructure bridge design group at Chodai. I was excited to spend my time with Chodai as they specialise in long span bridge design, which I have not had much exposure to whilst working in Australia. During my time with Chodai I went on a site visit to Sendai, prepared and discussed differences between Australian and Japanese bridge design methodologies with the substructure team, partook in a homestay and was trained in how to evacuate the office building by exiting out the window. The photos included in this report show some of the fun I have had whilst in Japan.

#### Work Experience

Each work day in Japan I travelled on the Tsukuba express from Ueno to Tsukuba. I soon learnt the art, perfected by the Japanese, of sleeping on the train and waking up just in time for my stop. The main difference between Japanese and Australian offices that I noticed immediately was the noise level and the hours worked. My office in Australia is always busy and quite chaotic with the bustle of people going about their daily jobs, whilst in Japan the office has a serene silence to it. I also noted that my colleagues tended to work very late

Compared to the departure time of 5pm of most staff in Australia. I have learnt a lot of interesting information about bridge design over my three weeks with Chodai and am keen to share it with my colleagues when I return to Australia.

#### Cultural Experience

During my time off from work, I tried to experience as many cultural experiences and sights as possible. One of the most enjoyable experiences was staying at a traditional ryokan, which I was able to do in both Miyajima and on our YPEP trip to Kyoto and Nara. In particular I enjoyed trying the variety of Japanese cuisine at the Enkai experience, as well as the experience of the Japanese public baths and onsen.

#### Summary

I have had an incredibly enjoyable experience in Japan as a part of the YPEP program, filled with much laughter and learning. The kind hearted nature of the Japanese people has made it a country I would like to come back to and visit many times - especially when it is snowing! I would like to thank the AJCE and Consult Australia for organising such a rewarding program. Special Thanks to the staff at Chodai in Tsukuba and in particular my mentor Osamu Matsumoto san who was very patient when I was practicing my Japanese.





## AJCE Activity 2012

### YPEP 2012 Summary- Chodai Co Ltd

**Garrett Bray**  
YPEP2012 Trainee  
BG&E Pty. Ltd.

As a structural bridge engineer, I was fortunate to be partnered with Chodai Co Ltd, a top calibre design firm with a strong 40+ year history of impressive bridge structures including some of the longest suspension and cable stayed bridges in the world.

I was based in the Sendai Office where I was met with fantastic hospitality, engaged in many technical exchange activities and enjoyed sharing plenty of social and cultural occasions with the friendly team there.

Due to its location in Northern Honshu, the effects of the 2011 Great Eastern Japan Earthquake and Tsunami have dominated the project work of the Sendai branch over the last 18 months. As part of the program I had a full day site visit to some of the most affected areas between Sendai and Kesenuma City where I inspected several severely damaged bridge structures as well as site locations and plans for improved replacement structures.

In another site visit to the severely damaged Wakabayashi Ward in the East part of Sendai, I observed the current construction of new 7m high tsunami walls proposed for approximately 32km of coastline with a core composed of tsunami debris. My exchange also included a visit to Hachinohe Institute of Technology where I presented to a class

of final year undergraduate students, PhD students and university lecturers. I was treated to a tour of the laboratory facilities and ongoing tsunami modelling experiments and their results.

In the office, we discussed differences between Australia and Japan in bridge design processes, contract arrangements and structural detailing.

I was also treated to a range of social and cultural experiences including sampling different Japanese delicacies over many meals with co-workers, an office family BBQ by the river, a homestay at the Sendai director's house, games of futsal, sightseeing around Sendai and Matsushima Bay as well of course the Cultural weekend visiting Kyoto and Nara.

YPEP 2012 has been a amazing cultural, business and technical experience and I thank the kind people of Chodai Sendai branch and of the AJCE for this opportunity.

## AJCE Activity 2012

# Summary of YPEP 2012: Pacific Consultants

**Ashleigh Chambers**

YPEP2012 Trainee

Beca Pty. Ltd.

### Introduction

During my YPEP in Japan I was fortunate enough to work with Pacific Consultants (PCKK) based in their Shinjuku office. During my time with PCKK I was able to learn about technical engineering applications and experience Japanese culture.

### Work Experience

After a very warm welcome to Japan with welcome parties with the AJCE and PCKK, I was given the opportunity to attend many site visits which allowed me to witness some of the impressive and unique engineering works in Japan relating to water and environment, river management, hydraulics and disaster planning and management.

I visited Lake Inbanuma, which has the poorest water quality in Japan, where I was able to see aquatic plant restoration, a working windmill, the Kaga-Shimizu Spring and a stormwater turbidity treatment area.

I travelled to the Chiba Prefecture to see Gaikaku Housuiro, which is used for flood mitigation and is the largest underground water discharge tunnel in the world. Here I was able to explore the 70m high underground reservoir.

I participated in a Machi Aruki (town walk) in Kiryu City with local community representatives to identify the best evacuation route from the town.

I visited the beautiful town of Hakone, and witnessed many examples of Sabo, techniques used to mitigate damage cause by sediment related disasters, including large Sabo dams, driftwood and debris screens, training dikes and river bank reinforcement.

I attended presentations on hydrodynamic techniques used in Japan and Thailand and witnessed how these techniques were implemented to minimize riverbed erosion at the Asagawa and Tamagawa rivers.



I visited the new science town of Tsukuba, where I saw the many hydraulic models used for river flow analysis at the PCKK laboratory, a 200m long 1:60 scale model of the Tenryugawa river and a tsunami model at the

Department of Land Conservation and saw the VLBI Antenna which is used to precisely measure movement in the tectonic plates at the Museum of Mapping and Surveying.

### Cultural Experience

I was very fortunate to experience and learn so much about Japanese culture during my training. I visited many shrines and temples in the Tokyo area including Naritasan, Meiji-jingo and Senso-ji and visited Asakusa, Ueno, the Imperial Gardens and Odaiba where I saw Tokyo from the top of the Pallet Town ferris wheel.



I was also fortunate enough to travel to Kyoto where I was able to see the amazing Kinkakuji, Nijo-jo, Sanjusangendo and the Kiomizu temple to name a few. I also visited Nara where I fed the cute deer and saw the very large statue of Buddha at Todaji Temple.

I have also gone to a baseball game, played pachinko, eaten at many izakaya and tried so many delicious Japanese foods and sake, been to a traditional onsen, seen a traditional Japanese dance, sung at karaoke and went to a traditional Japanese barbeque on the banks of the Tamagawa with my PCKK workmates and their families.

### Summary

This has been an amazing experience being immersed in the wonderful culture of Japan with such generous people and would like to thank AJCE and Consult Australia for organising YPEP 2012. I would like to say a special thank you the awesome, hard-working and kind friends I have made at PCKK who have taught me so much, especially my patient mentor Hiromi Kurosaki. It has been a 'sugoi' experience that I am very grateful for and look forward to visiting Japan again soon.



## AJCE Activity 2012

### My Japanese Experience with PCKK

**Robert Hickey**  
 YPEP2012 Trainee  
 AURECON

For the YPEP 2012 program I was given the amazing opportunity to work with Pacific Consultants (PCKK) in their Water Environment section. Pacific Consultants is a multi-disciplinary company very similar in size to my own company, Aurecon. To introduce me to the different topics that are important to water engineering at PCKK (and Japan in general) my mentors Yuasa-san and Kirihara-san set me several assignments as part of my pre-training dialogue. These assignments required me to research and compare the history, legislation and current state of water pollution in Australia and Japan and this process was invaluable to my preparation for the training.

For the training program, PCKK had organised a comprehensive set of field trips to demonstrate both projects that PCKK are involved in and projects that are significant to the industry. Each trip was organised by a different working group within the section and it showcased the breadth of expertise residing at PCKK. Our first trip was to the Lake Inbanuma area to look at the lake and its watershed.

There the team had implemented some novel measures to improve the water quality in the lake. The measures included reducing first-flush sediment in a stormwater reservoir and restoring near-extinct plant life to a section of the lake shore. This 'whole of watershed' approach to the problem was very impressive.

We also travelled to the Tokyo Metropolitan Area Discharge Channel where we took a tour of the pump facility and main surge tank. The immense size of the system is both an engineering marvel and a very visible indication of the size of the flooding problems that affect Japan.

Other field trips included Kiryu-city where we observed the engagement with the local community in disaster planning; the Hakone area to see examples of Sabo Dam usage (and gain some extra life courtesy of kuro tamago!); and

Tsukuba city where we visited both the PCKK and National Institute of Land Management hydraulic laboratories. At the hydraulic laboratories it was amazing to see the scale of the river, tsunami and other hydraulic models that are developed for physically testing ideas.

PCKK members in the River Planning group also presented us with elements of their research into varied topics including improved methods of calculating cross-sectional velocity and numerical modelling of large stones in river flows.

In addition to the technical aspects of the training my hosts also introduced me to a myriad of Japanese food and culture. Soba, okonomiyaki, takoyaki, yakisoba, nihonshu, schochu, izakayas and karaoke were all enjoyed immensely. While I think my Japanese language skill is still very poor, my understanding of the word 'Nomikai' is now excellent.

Throughout the whole experience I found all of the PCKK members (and Japanese people in general) to be extremely generous, hard-working, fun and in many cases hilarious. The hard-working nature of the consultants at PCKK is easily seen in the long hours spent at the office, much longer than many Australian consultants.

Overall I have an amazing time on this exchange and have made many friends, both Australian and Japanese that I hope to stay in touch with. I would like to thank the AJCE and Consult Australia for creating this invaluable opportunity and even more I would like to thank PCKK and its members for their generosity and hospitality.





## AJCE Activity 2012

# YPEP Program 2012 Report

**Sean Keown**

YPEP2012 Trainee

Arup

### Introduction

For the 2012 YPEP program, I was lucky enough to be hosted by CTI Engineering in Tokyo.

### Pre-training program

The pre-training dialogue helped me prepare for the program and assisted in initiating relationships with CTI staff. CTI instructed me to prepare a report and presentation on water resource management and water related disasters in Australia and Japan. This was a great way to initiate discussions between myself and CTI about the differences between the two countries water industries and water related issues.

### Program

CTI prepared a fantastic schedule for my 3 week program that was incredibly informative and rewarding. I received a great introduction to the operations of the CTI office and the structure of water resource management in Japan.

CTI led me on a two day tour of the disaster affected region around Sendai that was a shocking but rewarding experience. From an engineering perspective, the large scale levees that are being built and the rehabilitation work taking place were rewarding to see. Learning about the disaster management strategies and the work being undertaken to return life to normal in the area was also a valuable experience. On a personal level, it was amazing to see the resilience of the locals in such tough conditions and I had a brilliant time with the welcoming people of Tohoku.

CTI took me to see the Koraku DHC sewer pump station that uses the thermal energy of sewerage to power heating and air conditioning for buildings in the Koraku-1 area in central Tokyo. This innovative technology has allowed a significant reduction in the energy usage and carbon emissions for the area. I also visited the 'Kuramae Mizu no Yakata' where I found it particularly interesting to learn about combined sewer and stormwater systems and the

stormwater-wastewater separation techniques. I was also intrigued to learn about the advanced tunnel rehabilitation technologies used in Tokyo.

CTI took me to visit their very impressive Tsukuba Hydraulics Laboratory facility. At this facility CTI has the capacity to carry out large scale experiments to find solutions to problems such as sedimentation build up, pollutant distribution and flooding issues. I think this is a fantastic way of ensuring the effectiveness of engineering solutions and a valuable tool for finding solutions to unique problems.

One aspect of CTI's business I found particularly interesting was their disaster management strategy expertise. This is an area that is new to me so it was interesting to learn about disaster evacuation plans and the logistics involved with rehabilitation. I also got the chance to visit Odaiba where I learnt about the interesting work CTI is currently undertaking there following the issues experienced in the last tsunami/earthquake.

I found the weekend trip to Kyoto and Nara a fantastic experience. I learnt a lot about Japanese history and culture and had a lot of fun. Staying at the traditional Japanese hotel was a great experience and the food, sake and karaoke were all spectacular!

### Thank you

Thank you to CTI and AJCE for this fantastic and rewarding opportunity. The staff at CTI were incredibly welcoming and hosted a brilliant program. The kindness, hard work and expertise of the CTI staff made this program a truly valuable experience.



## AJCE Activity 2012

# My Experience in Japan with CTI Engineering

**Samantha Passmore**  
 YPEP2012 Trainee  
 AECOM

### Introduction

The River and Water Resources Division of CTI Engineering, based in Saitama City, has been a great host during my three week program here in Japan. During my time with them I received a number of introductions to each group within the department, and was able to compare Australian and Japanese water issues and solutions. I also was very lucky to attend numerous site visits.



Hijikata San making me feel at home



Tohoku Branch party with Tago San and Kato San

### Experience in the Office

On my first day we held presentations comparing work life in Australia and Japan. I could not believe a 1am finish is not unusual here! I then received introductions to different groups in the Saitama office, including Flood Mitigation, Sediment Management, Water Quality Management, River Administration, Coastal Engineering, Water Resources, Water Infrastructure, and Adaptation Strategy for Climate Change. In the Tokyo Main Office I was introduced to the Asset Management and Disaster Mitigation groups.

I enjoyed comparing common methods of dealing with issues in each country. For example large levees are not as popular in Australia, and River Law exists across a number of documents, not just one. I was also surprised to hear that there are water shortages in Japan as well, despite few droughts, due to the large population.

Within the office I quickly learnt about the culture of bringing a gift to share with colleagues upon return of a trip away. This is a great tradition as I got to try many delicious sweets from various regions in Japan.

### Experience out of the Office

Throughout my training, CTI was very generous with their time and took me on many interesting site visits. I was able to see the tsunami affected areas around Sendai and along the southern coasts of the Iwate and Miyagi prefectures. I am still unable to comprehend the speed and size of the tsunami, despite seeing the damage, images and videos. I also went on a boat tour to see the bridges of Tokyo city, the CTI Experiment Institute in Tsukuba, the Metropolitan Outer Area Discharge Channel, the levees, superlevees and Watergates along the Ara River, and to the Edo Museum (I feel I was very lucky to have this one included).

The YPEP trainees and their mentors visited Kyoto where we experienced an Enkai Party. The number of parties we have had, and the number of sunrises I have seen, showed me the Japanese definitely know how to party!



CTI Members showing us reconstruction works in Sendai



CTI Members at the Edo-Tokyo Special Study Cruise

### Summary and Acknowledgements

I feel so grateful to have had this exchange experience, and I can't wait to share everything I have learned with my colleagues in Australia. I thank all the staff at CTI, and all the strangers on the street who helped me when I was lost, for speaking English with me, or for being patient with my Japanese. I particularly want to thank Mr. Naoki Fujiwara for having me in his team and for giving me his employee's time, Ms. Chie Kato for being an amazing and patient mentor and Mr. Kengo Shibata, for being a good Japanese teacher and for his entertaining karaoke skills.

## AJCE Activity 2012

# My Japanese Adventure

**Greg Holland**

YPEP2012 Trainee

MWH

### Introduction

I was forwarded information on YPEP 2012 by a colleague and following a discussion with my manager, I jumped at the chance to apply. I was delighted to be accepted on to the exchange, as I thought it would be a great way to experience Japan. I was given my first choice placement at Nihon Suido Consultants (NSC), in the domestic wastewater section.

### Knowledge Sharing

One of the main aspects of the exchange was the opportunity to share knowledge and experiences with the engineers at NSC. Several workshops were organised with young engineers, the overseas business department and general discussions about odour control techniques and wastewater treatment.

I was lucky to be able to go on several site visits during my stay. These included state of the art underground Ariake Water Reclamation Facility in Tokyo and Chiba Nogiku no sato Water Treatment Facility in Chiba Prefecture.

I was taken on a three day trip to the Tohoku region to see the devastating effects of the 2011 earthquake and tsunami. In Kesennuma City we visited the completely destroyed Kesennuma Wastewater Treatment Plant and the temporary treatment plants that have been installed in the area. I could not believe the impact that the tsunami had on the area.



Stranded ship in Kesennuma City

After Kesennuma City I travelled to Kooriyama City to visit Kenchu Sewage Treatment Plant where, as a result of the Fukushima Daiichi nuclear disaster, radioactive sludge is being currently produced on site.

The sludge incineration facility at the treatment works is currently running at capacity and careful management of the waste is critical to ensuring minimal impact on the surrounding environment.

### Cultural Experiences

As part of my preparation for the exchange, I started to learn the Japanese language and find out about the culture. This served me well in Japan, although my Mancunian Japanese accent definitely needs some more work.

During my time in the Japan I have experienced the unique contrasts that Japan has to offer, from the beautiful autumn colours and breathtaking temples of Kyoto and Nara to the bright lights and busy streets of Tokyo.

The Japanese food has been eye opening and mostly delicious but I quickly learnt that the attitude of 'eat first, ask questions later' is required.

My new found love for sake would probably add another page to my report, so I have left this out.

### Conclusion

My time in Japan has been extremely rewarding and I have been left with great memories. I have made many friends and business contacts both from Japanese companies and the other YPEP participants. I hope that the relationships made during these three weeks can be maintained and that they will lead to more mutually beneficial opportunities in the future. I have decided to continue to study and plan to return one spring to see the cherry blossom.

I would like to take this opportunity to thank both the AJCE and Consult Australia for organising the exchange. I would like to personally thank the staff at NSC for hosting me for the three weeks, with a special mention to the NSC mentors Kazuhiro KISHI and Riota ADATI.



## AJCE Activity 2012

### An Australian in Japan

**Eleanor Chan**

PEP2012 Trainee

Aurecon Australia Pty Ltd

#### Introduction

I am a process engineer in the water and wastewater industry and was fortunate to be placed in the Water Supply team at Nihon Suido Consultants Co. Ltd.

During my three week placement, I partook in knowledge and cultural exchange discussions, site visits to water, reclamation and sewage treatment plants, a cultural trip to Kyoto and Nara.

#### Knowledge and cultural exchange discussions

We had open discussions and talked freely to find out about Japan and Australia's cultures. Learnings that I took away were that in Japan, a 10 hour working day is normal, design considerations for disasters are concerned with earthquakes, female representation in engineering is still low and that Japan places high importance on Overseas Development Assistance.

#### Site visits

Site visits included trips to the Ariake Water Reclamation Centre, Chiba Nogiku no Sato Water Treatment Plant, Kesenuma City and Kenchu Sewage Treatment Plant. Recycling is the norm rather than an innovation. In the wastewater treatment plants that I visited, there was 100% recycling and zero waste. Treated wastewater is recycled for toilet flushing and for industrial reuse.

#### Design improvements to mitigate against disaster

Having seen the devastation caused by the earthquake and tsunami when I visited Kesenuma City, it is heartening to see that Japan doesn't intend to be as vulnerable in the future. Key design innovations being implemented are key infrastructure and roads being built above the flood water levels, the use of super levees to prevent flooding, emergency public taps installed at the water treatment plants.

#### The water industry's response to radioactive sludge

At the Kenchu Sewage Treatment Plant, the sludge will continue to be captured and stored on site for at least the next 30 years until the levels of radioactivity have decayed to acceptable levels. Seeing the bags of sludge impressed upon me that the impacts of the Fukushima disaster will be long lasting and there is never an easy answer.

#### Kyoto and Nara cultural trip



My favourite part was visiting Nara and Kyoto. I enjoyed learning how the capital of is determined by where the Emperor lives, seeing Kyoto's famous pottery and learning about the children's festival.

#### Recommendations

I believe that Japan as a whole needs to work towards better work-life balance and increase diversity in the workplace and more actively support the increase female representation in engineering.

#### Acknowledgement

Thank you to NSC and the AJCE for this wonderful opportunity to experience Japan. I have made lots of new friends and I hope to work in Japan in the future. I would also like to personally thank my mentors Riota Adati and Kazuhiro Kishi.

## AJCE Activity 2012

### YPEP 2012

**Zisis Plakas**  
 YPEP2012 Trainee  
 URS

Being a railway engineer, my placement was with Nippon Koei in the international railways division. In my first few days I was welcomed to the office in Yotsuya and I was briefed on the company's line of work and active projects. It was a pleasant surprised finding out that we have worked on common international projects in the past. In the next few days I was introduced to the history of Japanese railways and the technology used today. I was also taken on 3 site visits. One in Sendai to visit the tsunami effected areas, one at Nippon Koei's Research & Development center and one at Toyama to visit the Hokuriku Shinkansen development.

Sendai was an eye opener to say the least. It was quite devastating to see the damage that was done in the coastal areas. We visited a number of locations to see damaged structures and buildings as well as the sorting sites of material collected from the effected areas. Finally we visited the tsunami defence dykes which are being reconstructed and upgraded along the coast line.

In my first weekend I was very kindly welcomed at the Shimizu's residence for homestay. There I sampled the Japanese family lifestyle and I was given my 30th birthday cake!

In the second week of my stay I visited the Nippon Koei R&D center in Tsukuba. There I was briefed on the line of work undertaken by the centre and was taken on a tour of the site.

My third site visit was in Toyama for the construction of the Hokuriku Shinkansen and the developments at Toyama station.

The 2 day visit to Kyoto and Nara was remarkable. My personal highlights of the trip were the visit to the Sanjusangen-do, Kinkaku-ji

(Golden Pavilion), Big Buddha and the deer park at Kasuga-taisha.



The YPEP has been a very valuable experience both on a personal and a professional level. It has given me a unique flavour of Japan, its people and the Japanese culture. I have made some excellent professional contacts and most importantly new friends. I would like to thank the AJCE, Mr Hidekazu Konishi, Mr Tetsuto Nakano and the Shimizu family for taking time off work and their families to make me feel welcome and I hope to return the favour in the near future.

This is my fourth time in Japan. The thing I came to love most about Japan is its versatility and its people. There is such a range in personalities, lifestyles, weather, scenery, styles.... Beach in the summer vs skiing in the winter, Tokyo city lights vs the beautiful countryside, tradition vs modernisation. Somehow Japan makes it fit together.

## AJCE Activity 2012

# JICA's Initiative on Dissemination of Dispute Board

### Adjudicator Committee , AJCE

#### 1. Background

The Japan International Cooperation Agency (JICA) has carried out various dissemination activities of the Dispute Board (DB) for projects financed by JICA ODA loan. Since 2008, AJCE has been involved in this program as a member of the JICA Study Team, together with Kyoto University and Nippon Koei Co., Ltd.. The DB is a new dispute resolution mechanism introduced in FIDIC construction contracts in 1999. At present, all of JICA's standard bidding documents (SBD) for construction employ the DB system, as shown below.

**JICA SBD and Dispute Board**

JICA SBD	Conditions of Contract	Dispute Resolution by:
Works	FIDIC MDB harmonized edition	Standing DB
Plant	ENAA form	Standing DB
Small Works	MDB original	Adjudicator

However, it is observed that application of the DB in actual projects shows very slow progress, and the following bottlenecks have been recognized for its full-scale application:

- 1) Demand-side (or user-side) issue: The real benefit of DB has not been realized by the parties of construction contract. Hence, the establishment of the DB has not yet been positively supported.
- 2) Supply-side issue: The availability of the DB member (or the adjudicator) is insufficient specially in the Asian region in consideration of growing demands.

This paper describes JICA's initiative in the dissemination of DB in the past five years.

#### 2. Countermeasures for Demand-side Issues

##### 1) Dispute Board Promotion Seminar

JICA delivered DB seminars in Indonesia, Vietnam, Sri Lanka, Philippines, Cambodia, Bangladesh, India, and Japan inviting public officers, contractors, and consultants to raise the awareness on the DB. There were 14 seminars held with more than 1,100 participants in total. In the seminars, a lot of questions were asked by the participants and typical questions and

answers (Q&As) are as follows:

**Q1:** When the country's legal system does not deal with DB, I think the DB's decision does not have a binding effect. What is your comment on this?

**A1:** The dispute resolution procedure with DB is agreed by contract parties based on the principle of "freedom to contract". We do not think the DB process has any conflict with the national legal system. If a law related to alternative dispute resolution (ADR) is available, it may support DB mechanism; however, it is not a prerequisite for effectiveness of the DB's decision. Furthermore, the successive process, including amicable settlement and arbitration, is stipulated in the FIDIC contract, when either party is dissatisfied with the DB's decision.

**Q2:** When either party is dissatisfied with the DB's decision, it can proceed with the arbitration. In this case, can the DB cost be regarded as wasted expense?

**A2:** According to statistics in the United States, only 2% of disputes referred to DB went to arbitration. This means that most of disputes were settled at the project site level and this fact should be well-recognized. Furthermore, a standing DB is able to mitigate the outbreak of the dispute by its dispute prevention function. The dispute may result in the delay of completion of the project entailing huge socioeconomic loss to a nation. The benefits brought by DB can be sufficiently justified by such reasons.

**Q3:** Can the cost of DB be covered by JICA ODA loans?



DB Promotion Seminar in Vietnam

**A3:** JICA considers that the DB cost is not a legal cost but a part of project management cost, therefore it is an eligible cost under JICA ODA loans. JICA will discuss the establishment of DB with the executing agency of the JICA ODA project during the project appraisal stage so that the cost allocation for DB will be ensured under the loan for upcoming projects.

**2) Dispute Board Manual**

JICA issued the user's manual of the DB in 2012. This concise manual has only 60 pages, but covers all the important aspects of a DB. It can be downloaded at the JICA website. The outline of the DB manual is as follows:

- |   |
|---|
| 1. Introduction   |
| 2. Brief Explanation of DB                                |
| 3. Consideration at Pre-implementation Stage              |
| 4. Consideration in Preparation of Tender Documents       |
| 5. Selection of DB Members                                |
| 6. Remuneration of DB Members                             |
| 7. Site Visit   |
| 8. Information to DB during Intervals between Site Visits |
| 9. DB Informal Opinions                                   |
| 10. Referral and DB Decision                              |
| 11. Amicable Settlement                                   |
| 12. Arbitration   |

Outline of DB Manual

**3) Mock Dispute Board Seminar**

A seminar titled "Mock Dispute Board Seminar" was held in Jakarta in May 2012, which aimed to deepen the understanding on Dispute Board by stakeholders of JICA ODA project by demonstrating mock hearings between DB and employer/contractor/engineer based on typical construction dispute scenarios. About 100 participants attended the seminar.

**3. Countermeasures for Supply-side Issue**

**1) DB Adjudicator Training Kit**

JICA developed a training kit for candidates for adjudicator in 2010. The 300-page comprehensive training material was designed to be used in the five-day adjudicator training workshop corresponding to FIDIC's Module 3/3A. Mr. Gordon Jaynes joined the JICA Study Team for the preparation of this kit.

**2) Survey on Adjudicator National List**

FIDIC has a list of approved adjudicators called the FIDIC President's List of Approved Dispute Adjudicators. At present, 61 adjudicators are registered in the list. To cope with increasing demand for adjudicators, FIDIC encourages its Member Associations (MAs) to establish their own National List of adjudicators. The JICA Study Team visited several MAs who already have lists, namely the VBI of Germany, SIDIR of Poland, and ARIC of Romania, in order to learn how they

established and maintain their national lists. The outcome of this survey was then utilized for the setting up of the Japanese National List by AJCE.

**3) Adjudicator Training and Assessment Workshop**

In order to verify the usefulness of the DB Adjudicator Training Kit, the Adjudicator Training Workshop (ATW) and Adjudicator Assessment Workshop (AAW) were held in Tokyo in 2010, inviting the candidates for adjudicators. The result of the assessment was delivered to JICA by a three-member assessment panel. This result was further conveyed to AJCE, which established its National List in May 2011 based on it. The AJCE list is the first list of adjudicators in Asia consisting of seven adjudicators at present.



Mock Hearing at AAW



Interview at AAW



AJCE Adjudicator List (at Website)

**4. Conclusion**

As a result of the continued efforts by JICA, the awareness on DB has been gradually raised in the JICA's ODA recipient countries and their executing agencies. Its progressive approach is appreciated by FIDIC as well as the Multilateral Development Banks. The ATW and AAW done in 2010 in Tokyo were repeated in Manila in November 2012, which invited candidates for adjudicator from Sri Lanka, Indonesia, Vietnam, and the Philippines. It is expected that new national lists of adjudicators will be established in the Asian region in the very near future.



Project Accomplishments by AJCE Members

# Sanitation Improvement Project for Baixada Santista Metropolitan Region

**Principal Firm (s)** Chuo Kaihatsu Corporation

**Project Site** Baixada Santista Metropolitan Region comprised of 9 cities along the Sao Paulo State coastline

**Client** Basic Sanitation Company of the State of Sao Paulo (SABESP), the Federative Republic of Brazil

**Finance** ODA Loan

**Period** August 2005 - July 2011

**Type of Project** Construction Management Services

**Project Outline**

In Brazil, especially in the State of Sao Paulo, the living environment of the residents was deteriorated year after year due to untreated sewage discharged directly into seacoasts and rivers.

This project aimed to improve the living environment of the residents through the improvement of water quality in coastal regions (Baixada Santista Metropolitan Region) in the State of Sao Paulo. The project comprised the three main objectives: (i) to improve the sewage facilities; (ii) to improve the environment monitoring system essential for the water quality management; and (iii) to provide funds required for consulting services. The implementation of this project made possible the treatment of a lot of wastewater from 120,000 households, leading to the improvement of sanitation in the regions.

**Details**

- This project includes the following activities:
- Development of sewage facilities (9 locations)
  - Construction of sewage pump stations (78 stations)
  - Installation of trunk sewer (approx. 100 km)
  - Installation of sewage pipe network (approx. 992 km)
  - Installation of automatic measuring instrument for water quality (approx.30 locations)



## Project Accomplishments by AJCE Members

# Project for Construction of Sindhuli Road (1st Phase of Section III) in Nepal

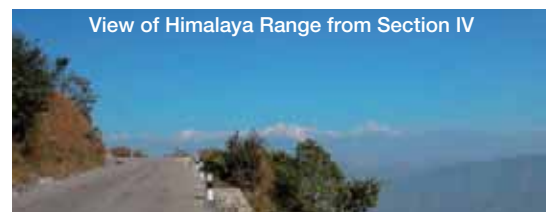
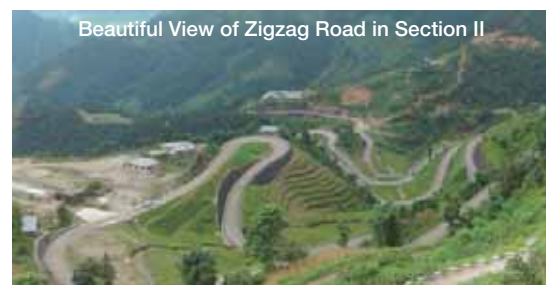
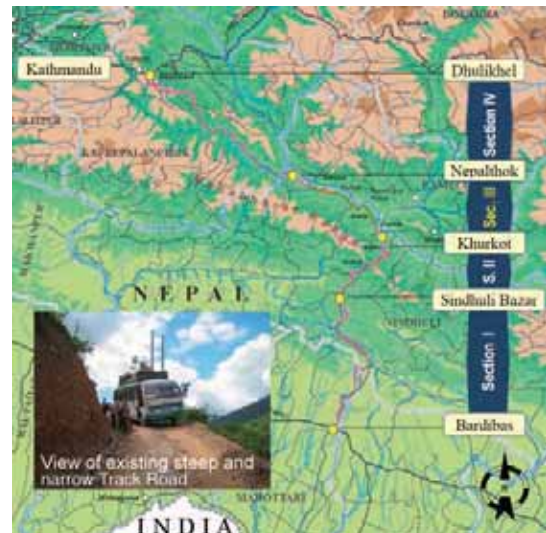
<b>Principal Firm</b>	Nippon Koei Co., Ltd. <b>NIPPON KOEI</b>
<b>Project Site</b>	Mid Hill Region
<b>Client</b>	Department of Roads, Ministry of Physical Planning, Works and Transport Management, Gov. of Nepal
<b>Finance</b>	Japanese Grant Aid
<b>Period</b>	July 2007 ~ June 2012
<b>Type of Project</b>	Consulting Services for Design and Construction Supervision

### Project Outline

In 1996, the Sindhuli Road construction project was started with the Japanese grant aid. The project road is one of the most important arterial roads in Nepal, linking Kathmandu City, the capital city of the country, with the Terai Plain in East-south. The project road, passing along the fragile slope of Mid Hill Region, has been constructed with a high mountains road construction technology including various steep slope failure prevention measures to fight against severe natural condition of Nepal. The project was divided into four sections and three sections of those (Section I, II and IV) with a total length of 123 km were already completed. The project is now coming to an end and the remaining Section III of 37 km long is currently under construction for completion for the year 2015.

### Details

- (1) **History of Sindhuli Road Project (160 km)**
  - Section I 39 km (1996 ~ 1998 completed)
  - Section II 34 km (2000 ~ 2009 completed)
  - Section III 37 km (2009 ~ under construction)
  - Section IV 50 km (1997 ~ 2003 completed)
- (2) **Approx. Amount of Japanese Grant Aid:**  
¥ 30.1 billion up to now
- (3) **Main Feature of 1<sup>st</sup> Phase of Section III Work**  
 Construction: December 2009 ~ June 2012  
 Length : 1<sup>st</sup> Phase: 14.3 km  
 (2<sup>nd</sup> Phase: 22.5 km under construction)  
 Road Width : 4.75 ~ 6.00 m  
 Design Speed: ~ 40 km/hr  
 Pavement Type: DBST  
 7 nos. of causeway structure



Project Accomplishments by AJCE Members

# Water Resources Existing Facilities Rehabilitation and Capacity Improvement Project in Indonesia

**Principal** Nippon Koei Co., Ltd.  
**NIPPON KOEI**

**Firm (s)** Jawa (Solo River and Brantas River Basins) & Sumatra (Ular River Irrigation)

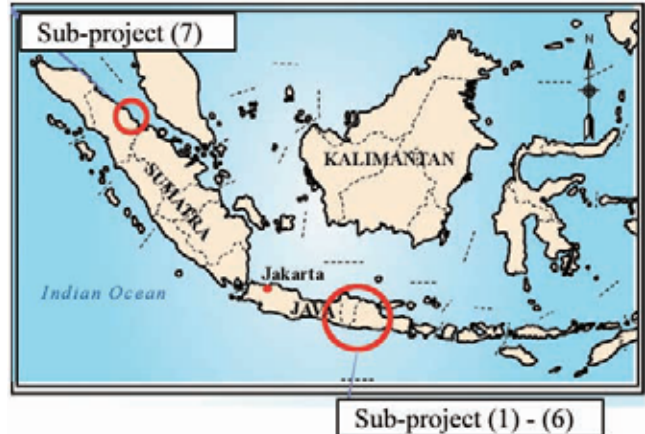
**Project Site**

**Client** Directorate General of Water Resources, Ministry of Public Works, Gov. of Indonesia

**Finance** Japanese ODA Loan

**Period** Oct. 2003 ~ Jun. 2012

**Type of Project** Consulting Services for Detailed Design and Construction Supervision, and Engineering Services for Capacity Building for the O&M



**Project Outline**

The Government of Indonesia has formulated the national policy to undertake optimized operation and maintenance (O&M) works for water resources existing facilities which were damaged and deteriorated for a long while due to natural disasters and lack of an adequate technical maintenance. The objectives of the project are to rehabilitate the function and capacity of the existing facilities of completed Japanese ODA loan projects in the water resource sector and to strengthen the operation and maintenance capacity of the responsible O&M organizations. This project promoted 1) effective water resources management for irrigation facilities, 2) reduction of risks of sediment flow, degradation of riverbed and inundation, and 3) stable water supply for irrigation.

**Details**(List of Sub-projects)

- (1) Solo River Basin Improvement (Upper Solo River protection/repair, Madiun River protection including rubber gate repair)
- (2) Karangates Multipurpose Dam (improvement of revetment at spillway plunge)
- (3) Wlingi Multipurpose Dam (construction of Sabo dam and bypass channel: 7.2 km)
- (4) Brantas Middle Reaches River Improvement (river protection/repair, repair of intake weir for irrigation)
- (5) Porong River Improvement (river protection/repair)
- (6) Mt. Kelud Sabo dam repair
- (7) Ular River Irrigation (18,500 ha) (rehabilitation: construction of intake weir and link canals (42.9 km))



Rehabilitation of Jatimlerek Rubber Dam



Groundsill and Revetment on Batan River



Slit type Sabo dam (LECD-8) on Lekso River



Ular Headworks



Project Accomplishments by AJCE Members

## The Project for Water Service Improvement in Mamminasata Metropolitan Area in South Sulawesi

<b>Principal Firm (s)</b>	Nihon Suido Consultants Co., Ltd. Nihon Suido Consultants Co., Ltd.
<b>Project Site</b>	Mamminasata Metropolitan Area, South Sulawesi Province, Indonesia
<b>Client</b>	Japan International Cooperation Agency (JICA)
<b>Finance</b>	JICA
<b>Period</b>	September 2009 - March 2012
<b>Type of Project</b>	Technical Cooperation

**Project Outline**

The purpose of this project was to enhance the capacities of 4 PDAMs (Water Works bureau) staff in Makassar, Gowa, Maros and Takalar in the Mamminasata Metropolitan Area, focusing on technical management (O&M) and financial administration of water supply services, through the various activities by the following experts;

- 1) Chief advisor/Water Supply System Management / Institutional Capacity Development
- 2) Water Supply Utilities Management Advisor (Nagoya City Waterworks & Sewerage Bureau)
- 3) Deputy Chief Advisor / NRW reduction
- 4) Leak detection
- 5) Finance management
- 6) Business management / Customer Relations
- 7) O&M of Water Treatment Facilities (Okayama City Waterworks Bureau)
- 8) Water quality management
- 9) GIS
- 10) Inter-Organizational Coordination Advisor

**Details**

In order to achieve the project purposes, the following five (5) outputs were required;

Output1: Inter-regional cooperation and coordination mechanism among PDAMs is strengthened.

Output2: PDAMs' financial administration capacity is strengthened.

Output3: PDAMs' technical capacity for NRW reduction is strengthened.

Output4: PDAMs' technical capacity for establishment of GIS database is strengthened.

Output5: PDAM's technical capacity for water quality management of small scale water treatment facilities is strengthened.



Project Map

Project Activity



PIU Meeting

Output1

Output2

Output3

Output4

Output5



Project Accomplishments by AJCE Members

## Consultancy Service for Experts and Special Technical Assistance for Eastern Province Water Supply Development Project

**Principal** Nihon Suido Consultants Co., Ltd.  
 Nihon Suido Consultants Co., Ltd.

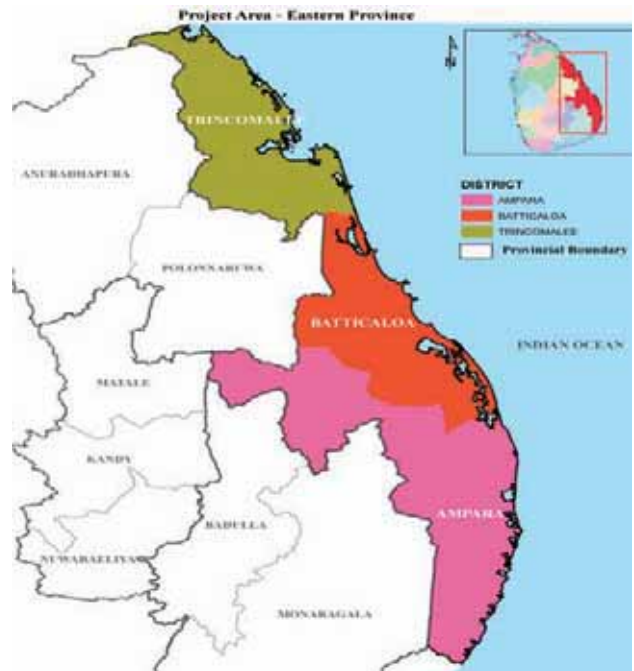
**Firm (s)** Eastern Province, Sri Lanka  
**Project Site**

**Client** National Water Supply and Drainage Board (NWSDB), Sri Lanka

**Finance** Loan of JICA (Japan International Cooperation Agency)

**Period** January - December 2012

**Type of Project** Consultancy Service for Experts and Special Technical Assistance



**Project Outline**  
 In March of 2010, JICA signed a loan agreement with Sri Lanka Government for Eastern Province Water Supply Development Project (EPWSDP). The project aims to expand water supply facilities and to ensure the water supply service rate to be increased from current 38% to 72% by 2014.

During the implementation of the EPWSDP, the NWSDB also intends to obtain the experts and special technical assistance to enhance the capability of engineers of the NWSDB in respect of algae/cyanobacteria control and mechanical/electrical/electronic (M&E) engineering design.

**Details**

- 1) Algae/cyanobacteria control
  - Survey on algae/cyanobacteria growth and cyanotoxins in dams for water source, and their control/removal methods
  - Conducting pilot project for cyanobacteria control/removal
  - Training NWSDB staff
  - Preparing guidelines and updating design manual, recommendations for improvement of existing WTPs
  - Suggestion of cyanotoxins standards for drinking water quality
- 2) Mechanical/electrical/electronic engineering
  - Review & recommendations of designs
  - Design operational philosophies
  - Design associated PLC control systems/SCADA
  - Training the NWSDB staff
  - Updating the design manuals of M&E



Algae/cyanobacteria survey



Cyanotoxin analysis and training



Pilot project for algae control by Sonicator



Pilot project for algae removal by Micro-strainer



Seminar (M&E)



Seminar (algae control)

Project Accomplishments by AJCE Members

## THE PROJECT FOR SOCIAL INFRASTRUCTURE DEVELOPMENT FOR PROMOTING RETURN AND RESETTLEMENT OF INTERNALLY DISPLACED PERSONS (IDPs)

**Principal Firm(s)** Oriental Consultants Co., Ltd  


**Project site** Acholi Sub-region, Northern Uganda

**Client** Japan International Cooperation System (JICS)

**Finance** Japanese Grant Aid

**Period** Aug 2010 - Mar 2013

**Type of Project** Detailed Design  
 Tender Assistance  
 Construction Supervision  
 Soft Component (on-the-job training)

**Project Outline**

Northern Uganda is characterized with a high level of poverty which can be attributed to the Lord's Resistance Army (LRA) insurgency. During the 20-year conflict beginning in the 1980s, much of the basic social infrastructure was destroyed or abandoned and the local government became non-functional in the region. Since the defeat of the LRA and their subsequent relocation away from the country in 2006, the Government of Uganda has emphasized and facilitated the return process of IDPs and prepared the National Peace Recovery and Development Plan (PRDP) in order to stabilize and recover Northern Uganda. The PRDP emphasizes the importance of infrastructure rehabilitation and improvement of trunk road network connecting the districts and community access road network. This Project objective is to promote return and resettlement of former Internally Displaced Persons (IDPs) back to their original villages through provision of access roads and bridges to the villages.

**Details:**

The project includes 6 sections in Northern Uganda:

No.	Structures	Road Work Section	
		Improvement (Pavement type)	Spot Maintenance
1	1 bridge (L=15m) 3 box culverts	2.7 km (Gravel)	20.1 km
2	1 bridge (L=15m)	0.7 km (Gravel)	19.1 km
3	1 bridge (L=15m)	0.8 km (Gravel)	7.1 km
4	1 bridge (L=45m)	0.6 km (Gravel)	-
5	2 bridges (L=15m)	5.9 km (Gravel)	17.1 km
6	-	11.0 km (DBST)	-



Section 3, Ayago Bridge L=15m



Section 4, Otaka Bridge L=45m



Section 2, Aringa Bridge L=15m



Section 1, Box culvert



Section 2, Aringa bridge (during construction)



Section 1, Atiabar Bridge



Section 6, Cement stabilization work



Section 6, Stabilization, stabilizer



Section 6, DBST work, chips sprayer



Section 6, DBST work



Survey work on-the-Job training for District staffs (Soft Component)



Precast girder work on-the-Job training for District staffs (Soft Component)



## Project Accomplishments by AJCE Members

# THE PROJECT FOR INTRODUCTION OF CLEAN ENERGY BY SOLAR ELECTRICITY GENERATION SYSTEM

<b>Principal Firm(s)</b>	Oriental Consultants Co., Ltd. 
<b>Project Site</b>	La Trinidad, Diriamba, Republic of Nicaragua
<b>Client</b>	Japan International Cooperation System
<b>Finance</b>	Grant Aid by Japanese ODA
<b>Period</b>	August 2011 - January 2013
<b>Type of Project</b>	Detailed Design Tender Assistance Construction Supervision



Perspective View

### Project Outline

The Republic of Nicaragua aims to have 85% of its electricity generated through renewable energy by 2025. As a first step to achieve this target, a 1.38MW solar power plant, the largest in Central America to date, was constructed using grant aid from Japanese ODA. The solar power plant can accommodate the electricity consumption of 1,100 houses and will be opened to neighboring residents, students and tourists as a solar park with the aim of increasing environmental awareness.

### Details

Oriental Consultants provided engineering services for the design and construction supervision of the following components:

Grid connected 1.38MW Solar PV (Photovoltaic) System: estimated power generation is approximately 1,985 MWh/year, with a reduction of CO<sub>2</sub> of approximately 1,100 t/year.

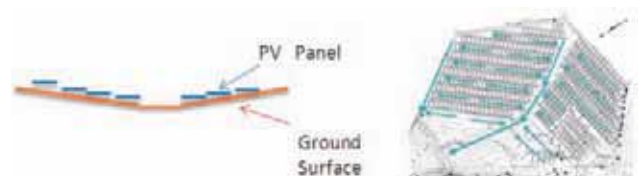
Facilities:

- > Administration Building (324m<sup>2</sup>): exhibition hall, office, guard room, storage, etc.
- > Electrical Building (352m<sup>2</sup>): electrical room and transformer room.

Data Management and Monitoring System: remote monitoring through the Internet.

The concepts of our design emphasized environment friendliness as demonstrated below:

Arrangement of PV panel layout and drainage plan utilizing the natural land features  
 Designing the administration and electrical buildings in the image of a tree, whereby trees are known to reduce CO<sub>2</sub> in the environment by absorbing CO<sub>2</sub> during photosynthesis. Similarly, the PV panels on the roofs convert light energy to electricity, resulting in an overall reduction of CO<sub>2</sub> in the environment.



PV layout Image

Rainwater Flow Image



Building Design Concept



Panoramic View

## Project Accomplishments by AJCE Members

# CONSULTING SERVICES FOR THE PROJECT FOR CONSTRUCTION OF RAILWAY FLY-OVER [NARNY GUUR] IN ULAANBAATAR CITY IN MONGOLIA



<b>Principal Firm</b>	CTI Engineering International Co., Ltd.
<b>Project Site</b>	Ulaanbaatar City, Mongolia Client Ministry of Roads and Transportation, Mongolia
<b>Finance Period</b>	Grant Aid, Japan Nov. 2009 - Nov. 2012 (37 months)
<b>Type of Services</b>	Basic/Detailed Design and Construction Supervision

### Project Outline

The project is to provide a fly-over and approach roads crossing the railway and Narny Zam as a crucial north-south corridor of the Middle Ring Road encompassing the integrated central business district of Ulaanbaatar City.

The major attainments of the project are: i) effective enhancement of road network, ii) safe and smooth vehicular traffic and iii) improvement of quality of social life in Ulaanbaatar City.

### Project Scope

The scope of the project under Japanese Grant Aid is construction of 895 meter long new road, consisting of a fly-over and northern/southern approach roads.

#### < 1. Fly-over : L=262m >

- Superstructure 6-span continuous steel I-girder
- Erection methods Crane with bent & Launching
- Abutment RC inverted-T type
- Pier Steel Multi-pillar ( $\phi 1.5\text{m}$ )
- Foundation Cast-in-place pile ( $\phi 2.5\text{m}$ ) & Rotary penetration steel pile ( $\phi 1.5\text{m}$ )

- Incidental facilities Street lighting & drainage

#### < 2. Northern Approach Road : L=280m >

- Channelization 223m (east) & 205m (west)
- Intersection 2 locations at Narny Zam
- Incidental facilities Skid-resistant pavement, street lighting, traffic signals, drainage, delineator, guard pipe, etc

#### < 3. Southern Approach Road : L=353m >

- U-turn road 560m in total
- Incidental facilities Street lighting, drainage, road marking, delineator, etc

### Project Features in Management Aspects

**[Schedule]** intensive and efficient work at project site in April - October due to severe climate condition

**[Quality]** prefabrication and shop assembly of major steel members at supplier's workshop in Japan

**[Safety]** ultimate completion of the project without any interruption to strictly punctual railway operation and no derivative traffic congestion at Narny Zam



Fly-over section above Ulaanbaatar Railway



Fly-over section above Narny Zam



Northern approach road (view from south to north)



Northern approach road (view from north to south)



Fly-over section between Railway and Narny Zam



Staircase at east-south portion of fly-over section



Southern approach road (view from north to south)



Southern approach road (view from south to north)



Reinforced earth retaining wall for approach roads



Opening ceremony with attendance of VIPs



Project Accomplishments by AJCE Members

## Astana City Water Supply and Sewerage Project

<b>Principal Firm (s)</b>	NJS Consultants Co., Ltd. 
<b>Project Site</b>	Astana City, Kazakhstan
<b>Client</b>	AKIMAT of Astana City
<b>Finance</b>	JICA
<b>Period</b>	June 1999 -August 2012
<b>Type of Project</b>	Feasibility Study, Design and Construction Supervision

**Project Outline**

NJS completed the Feasibility Study and Master Plan of the project in 2000 and the detailed design in 2003. The water supply component of the project included the construction of a new reservoir; construction of 210 MLD water intake tower and pump station; 100 MLD water treatment plant; rehabilitation of main distribution pump station; replacement of 100 km of distribution pipelines up to 1000 mm diameter, valves and appurtenances; installation of 153,900 water meters and monitoring system for the intake, treatment and distribution networks.

The Sewerage component of the project included the rehabilitation and upgrading of existing sewage treatment plant up to 136 MLD including the inlet pump station, grit chamber, primary and sedimentation tank, aeration tank, final sedimentation tank, treated effluent pump station and sludge treatment facility; rehabilitation and construction of 17 sewage pump stations; replacement of 21 km sewers; and monitoring systems for the treatment plant and intermediate pump stations.

**Details**

Conducted topographic, utility and soils surveys; preparation of detailed design, prequalification documents and tender documents; monitoring progress; quality control; construction supervision and inspection; EIA; review of contractor's payment and monitoring of financial aspects; and supervision of testing and commissioning, including M&E works and process commissioning.



Water Intake Pump Station



Sewerage Treatment Plant



Discharge Pump Station



Water Treatment Plant

Project Accomplishments by AJCE Members

## Xinjin Zhi Museum

**Principal Firm (s)** P.T. Morimura & Associates, Ltd.  
(M&E Consulting engineer)



KENGO KUMA & ASSOCIATES  
(Architect)  
Oak Structural Design Office  
(Structural engineer)

**Project Site** Xinjin, Chengdu, Sinchuan prefecture, China

**Client** Fantasia (Chengdu) ECO-torment Company Limited

**Period** Design & Construction  
2008/10 - 2011/12

**Type of Project** Schematic design, Design development

### Project Outline

This is a museum which stands on ground sacred to Taoism, one of the big three religions in China, at the foot of Mt. Laojun.

The building features a façade, which is constructed with tiles made from locally sourced materials and manufactured locally using traditional methods, in respect of Taoism which stresses the importance of being in harmony with nature. The tiles are suspended on wires, so that they seem to float in mid-air, to give an impression of light, airy weightlessness to create an organic façade that blends in with the natural surroundings. The tiles of the façade also serve to break up the sunlight, creating a gentle diffusion of soft light in the building interior.

A gently sloping spiral walkway has been constructed to lead visitors to each exhibition space in a natural progression. From the exhibition space on the top floor you can enjoy magnificent views of Mt. Laojun.

### Details

Building area: Approx. 4,000m<sup>2</sup>  
Total floor area: Approx. 2,100m<sup>2</sup>  
Number of floor: 3 stories, 1 basement  
Structural: Reinforced concrete, partly steel frame



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## Project Accomplishments by AJCE Members

# Nhat Tan Cable - Stayed Bridge Project

<b>Principal Firm (s)</b>	CHODAI CO., LTD. 
<b>Project Site</b>	Hanoi City, Vietnam
<b>Client</b>	Project Management Unit 85, Ministry of Transport of Vietnam
<b>Finance</b>	Japanese ODA Loan(STEP)
<b>Period</b>	November, 2007 - Present
<b>Type of Project</b>	Bridge Construction Detailed Design Service Construction Supervision Service

### Project Outline

The Nhat Tan Bridge, which is located approximately 3.5km downstream of Thang Long Bridge, is planned to mitigate further congestion in the already congested bridges over the Red River. The Nhat Tan Road is located in the northern part of Hanoi Ring Road 2 which is expected to contribute the economic development along the route. Vietnam will celebrate the Thanh Long - Hanoi Millennium Anniversary in October 2010. The bridge will be the memorial bridge.

The main bridge is designed as six-span continuous cable-stayed bridge which forms the signature span of the project. When completed, the Nhat Tan Bridge will be called "Vietnam-Japan Friendship Bridge". Among three interchanges constructed in the Project, Vinh Ngoc Interchange will connect Nhat Tan Road and National Highway No.5. The northern end of the project road will be extended to Noi Bai Airport. Alternative road connecting the airport and the city center.

### Details

Project Length, Widths: 9.95 km, W=33.2 - 47.3 m, 25 m x 2

- Bridges : L= 3.5 km
  - Main Bridge (Cable-stayed bridge)  
(L=1,500m, Main span L=300m)
  - Approach Bridges  
(L=2,255m, PC box girder, Super-T girder)
  - Other Bridges (L=240mx2, PC box girder,  
L=288m x 2, Super-T girder)
- Interchanges:
  - Full-clover type 1 (crossing at NH5 extension), Others 2



Photo : IHI Infrastructure Systems Co., Ltd



Project Accomplishments by AJCE Members

## THE PROJECT FOR RURAL WATER SUPPLY IN OROMIA REGION

**Principal Firm(s)** KOKUSAI KOGYO CO.,LTD.  
 **KOKUSAI KOGYO CO.,LTD.**

**Project Site** Oromia region, the Federal Democratic Republic of Ethiopia

**Client** Oromia Water, Mineral and Energy Bureau

**Finance Period** Japan's Grant Aid Construction:  
Apr.2010 - Nov.2012

**Type of Project** 1) Facility Construction  
2) Equipment Procurement

- Water Supply facilities (Water source, Reservoir Tank, Pipeline, Water Faucet)
- 2) Equipment Procurement
  - Maintenance equipment (Motorbike, Pick-up Truck)
  - Survey equipment (GPS, Geophysical survey equipment, Survey equipment, Water analysis Kit)

**Project Outline**

Ethiopia is located in the northeastern part of Africa, and the Oromia Region, the target region, is located in the center of Ethiopia with an estimated area slightly smaller than Japan at 353,690 km<sup>2</sup> and a population of 25 million people - the largest region by area and population in Ethiopia. However, the water supply facility ratio in this region remains at 46.7% (urban 87.5%, rural 40.18%). Hence, residents have been forced to spend time to transport unsanitary water from a water source to their residence, which can take nearly a whole day. This has been the cause of economic stagnation, decline in school attendance and increasing occurrence of water borne illnesses.

In order to improve this situation, the Ethiopian government has set a target for every person in Ethiopia to have access to safe water. The project objective is to supply clean water to the 90,000 people in three Zones, West Showa, Horo Guduru and Jimma, resulting in an improved living environment for those people.

**Details**

- 1) Facility Construction
  - Hand Pump
  - Spring Protection





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### Editor's note

We contribute to making people's lives better and safer and the economy more efficient to achieve social development by constructing a variety of infrastructure. However, tragic disasters such as the Great East Japan Earthquake and Tsunami in March 2011, and a recent highway tunnel collapse accident in Japan sent a strong message to the nation that useful infrastructure can pose a great risk if it is not designed taking into account the entire lifetime of operation and maintenance and if this maintenance is not properly carried out.

Much infrastructure that was constructed during Japan's period of high economic growth, between 1950s and 1970s, has deteriorated and is increasingly in need of rehabilitation. However, the proper maintenance of the vast amounts of existing infrastructure is extremely costly, while any new benefit is hard to identify. It is, therefore, difficult to gain sufficient budget for such maintenance works and little interest is shown in them by society..

With deep understanding of the importance of maintenance of all existing infrastructure, AJCE should take the initiative to actively raise awareness of this not only amongst administrators, engineers and citizens in Japan, but also in emerging countries where much construction of infrastructure is under way.

Osamu Nakahara  
Vice Chair of Publicity and Relations Committee



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