



REPORT ON **STUDY TOUR GRANT 2009**

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Introduction

This report is to summarize the Study Tour Grant 2009 trip in Japan held by Japan Society of Civil Engineer (JSCE), which I participated in August 2009 as a nominee by Viet Nam Federation of Civil Engineer Associations and Phuong Dong University

The tour was scheduled by JSCE as follows:

Date	Time	Itinerary
Sep. 7	A.M 10:00- 11:00	Arrival : JSCE headquarter
	P.M 13:30-16:20	Visiting Public Works Research Institute
	16:40-18:00	Return to Tokyo
Sep. 8	A.M 9:30	Attending Kajima Technical Research Institute
	P.M 14:00-16:00	Visiting Obayashi Corporation
	17:30-19:00	Move to Kobe
Sep. 9	A.M 9:00	Visiting Akashi-Kaikyo Bridge
	P.M 13:30	Visiting Disaster Reduction and Human Renovation Institution
	16:00	Visiting Himeji Castle
	17:45	Return to Tokyo
Sep. 10	A.M 9:45	Visiting Haneda Airport construction site
	P.M 15:0-16:30	Attending Waseda University
Sep. 11	A.M 9:00-9:50	Move to Tokyo Institute of Technology
	11:00-12:00	Visiting Tokyo Institute of Technology
	13:20-18:10	Attending 11 th international Summer Symposium Keynote Lecture and STG report

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

1. Mr. Le Hoang Tuan

Vietnam Federation of Civil Engineer Associations_ Vietnam

Phuong Dong University

Civil Engineering Department

2. Mr. Heng Hsin Chang

Chinese Institute of Civil and Hydraulic Engineering Taiwan R.O.C
Tamkang University
Transportation Management Department

3. Ms Jeramee Villadiego Dimapilis

Philippine Institute of Civil Engineers
University of Perpetual Help System Laguna
Civil Engineering Department

4. Mr Pornthep Tangariyakul

Engineer Institute of Thailand_ Thailand
Mahidol University
Civil Engineering Department

Japan Society of Civil Engineer Head Quarter

The Study Tour team was taken to the Head quarter of Japan Society of Civil Engineer (JSCE) at 9h30 am on 7th September 2009, where we was welcomed by the following persons:

- Mr. Nobuaki Otsuki - Director of JSCE
- Mr. Yanagawa - JSCE
- Mr. Lee Yun Sub - Tokyo Institute of Technology

Mr. Yanagawa introduced JSCE to us including details of organisation mission, operation and goals. JSCE was established in 1914 with 8 regions in Japan and 1 overseas comprising of 35,000 members, of which approximately 30,000 are regular members and 5000 are student members

JSCE also has international joint operations:

- Technology and academic cooperation and collaborations
- JSCE website and publication
- Disaster relief and reconstruction investigation
- Support to civil engineer education

With 8 branch offices located from the North to the South of Japan, JSCE has nation-wide network to support civil engineer and create a close communication partnership with the local and central governments in the field of civil engineering.



(Photo No.1 JSCE headquarter)

Public Works Research Institute

The Public Works Research Institute (PWRI) is one of new Research Institutes in Tokyo which began their new operation in April 2006 when the Civil Engineer Research Institute of Hokkaido was integrated into PWRI.

PWRI has 368 staff including 364 full-time staff and 4 executives with 3 main Institutes:

- The Tsukuba Central Research Institute
- The Civil Engineer Research Institute For Cold Region
- The International Centre for Water Hazard and Risk Management

The PWRI is aimed at improving civil engineering technology by conducting studies on civil engineering techniques, experiments, research and development.

The research facilities were seen within PWRI:

- Road Technology Research Group
- Pavement Research Team
- River and Dam Hydraulic Engineering Research Team
- Center for Advanced Engineering Structural Assessment and Research

This facility has a large scale three dimensional shaking table to examine the seismicity of the ground and infrastructure by simulating strong motion of large earth quake. I have also observed hydraulic design of almost all spillways and out let works, flow conditions, hydraulic characteristics such as: pressure acting on structure walls, water level in water ways.

Kajima Technical Research Institute

Our second day starting with a visit to Kajima Technical Research Institute (KaTRI) with Dr. Ikeya, where we was introduced with technological excellence in materials, construction and production to ensures the creation of more reliable structures.



(Photo No.2 Kajima Technical Research Institute)

KaTRI is the first research Institute in the industry which was established in 1949. During 60 years of operation there have been total 290 members of employees. The Institute's activities is aimed at all those policy oriented research and related actions including discovering new materials and advanced construction, new technology to be applied underground or marine structures, reclaimed land and create deep underground structure, research and development has been being carried out in many areas ranging from site investigation to construction such as:

- Large scale testing for concrete, steel, beams and columns
- Large scale wind tunnel
- Segmented wave- maker for generating multi- directional waves

KaTRI's existing projects include healthy and rich environment. KaTRI value the association between man and nature and create new comfortable and pleasant environment

- Mori Tower
- Akashi- Kaikyo Bridge
- Okutotaragi Power Station

The visits to difference laboratories to see new design on environmental issues at KaTRI were very interesting showing a strong capability of KaTRI as well as Kajima Corporation in carrying out a high workload in the Japan construction industry and overseas

Obayashi Corporation

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



(Photo No.3 Obayahshi Corporation)

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

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

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

1. Akashi- Kaikyo Bridge

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



(Photo No.4 Akashi-Kaikyo Bridge)



(Photo No.5 Maiko Marine Promenade)

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

Disaster Reduction and Human Renovation Institution and Himeji Castle

9th September 2009 I had a chance to visit special places in Kobe city to have more understandings of Japanese history and culture.



(Photo No.6 Disaster Reduction and Human Renovation Institution)

On 17th January 1995 Kobe city experienced the most terrible earthquake. The focus of the earthquake was 16km beneath its epicenter on the northern end of Awaji Island, 20km away from the Kobe city. Approximately 6,434 people lost their lives. 200,000 buildings collapsed and 1 km of the Hanshin Express way was damaged.

Himeji Castle

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

with a folding fan shape...



(Photo No.7 Himeji Castle)

Himeji Castle always appear in Japanese's thinking every time, everywhere

Construction site of Haneda Airport

On the following day, we had a chance to observe new issues in the construction site during our visit to Haneda Airport expansion project

This project consists of 3 runways

- 3000 m long runway A
- 2500 m long runway B
- 3000 m long runway C

The reclamation land is 950,000 m² in area with 2200m length and 420m width and -12 ~20m depth. The maximum height is +17,1m



(Photo No.8 Construction Site of Haneda Airport)

In order to improve the construction quality and reduce the construction time, the advanced construction techniques have been introduced. For example, ground plan of Standard jacket or Ultra High Strength Fiber Reinforced Concrete (UFC)



(Photo No.9 Construction Site of Haneda Airport)

Haneda project is one of the most important projects in Japan from 2009 to 2011. This modern airport will substitute the International Narita airport in the near future. This very large project in Tokyo also includes many functional units such as roads, office building, shopping areas and housings etc.

Waseda University and Tokyo Institute of Technology

- **Waseda University**

Together with Ph.D Tomoya Shibayama and Dr. Tsuyoshi Ikeya we started a bus journey around Waseda University from main building to campus.



(Photo No.10 Waseda University)

Waseda University is a private university located in Tokyo. Founded in 1882 as Tokyo Senmon Gakko, the institution was renamed "Waseda University" in 1902. It is known for its liberal climate symbolized by the motto independence of learning

On 21st October 2007 Waseda University celebrated the 125th anniversary



(Photo No.11 Waseda University)

Waseda University's main campus is located in the Nishi-Waseda district of Shinjuku, though Waseda is generally associated with the Yamanote Line station, Takadanobaba Station. Apart from the main campus in Shinjuku, other campuses are located in Chuo and Nishitōkyō of Tokyo, Tokorozawa-shi and Honjo-shi of Saitama, and Kitakyushu-shi of Fukuoka Prefecture.

Beside excellent study and research, Waseda's student always have high rank in sport champions such as : baseball, football, rugby, karate...

The Waseda University Baseball Club is the most successful team in the Big6 league in terms of winning percentage, but it has 37 league championships, which puts it second behind Hosei University.

The Waseda University karate club is one of the oldest in Japan, formed in 1931

Especially Shizuka Arakawa (figure skater, 2006 Winter Olympics gold medalist) or Yoriko Okamoto (taekwondo, 2000 Sydney Olympics bronze medalist)

- **Tokyo Institute of Technology**

The Tokyo Institute of Technology (TIT) is the largest national university in Japan in science and technology. It has about 5,300 undergraduate and 3,000 graduate students. The number of Master's degree students is about three times the number of doctoral students. This ratio is reflective of the fact that in Japan relatively few highly-qualified students continue to the doctoral level as compared to students in Europe or the United States. The Okayama campus is located in Tokyo; the Nagatsuta Campus was founded in a northern suburb of Yokohama in 1975.

I had a briefing of tour Tokyo Institute of Technology and I was very pleased to deepen my knowledge and understand in TIT's history, activities, hope and dreams



(Photo No.12 Tokyo Institute of Technology)



(Photo No.13 Tokyo Institute of Technology)

During decades, the Tokyo Institute of Technology probably has had the largest impact of all Japanese universities in the construction field.

The academic facilities at TIT are excellent. There are many relevant academic literatures even more at library. The academic conditions are professional and inclusive. In addition, the relationships between academic staff are always be good.

- **11th International Summer Symposium**

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

Moreover, there were a lot of presentations from 7 areas in civil engineering:

- Structural Mechanics and Earthquake Engineering
- Hydraulic, Coastal and Environmental Engineering
- Geotechnical Engineering
- Infrastructure Planning and Management
- Materials, Concrete Structures and Pavements

- Construction Management and Engineering
- Environmental Systems and Engineering

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

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

Acknowledgement

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

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

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

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

My thanks go to those whom I met for the time and effort given:

- 1) JSCE : Mr Hiroyuki Yanagawa
- 2) Kajima Technical Research Institute : Dr Tsuyoshi Ikeya, Dr. Sivaleepunth Chuyakom and staff.
- 3) Public Works Research Institute : Ph.D Kazunori Wada, Mr. Kawakami Atsushi, Ph.D Hitoshi Umino, Mr. Susumu Nakajima, Mr. Naoki Yanadori.
- 4) Obayashi Corporation : Mr. Satoru Kawaguchi.
- 5) Waseda University and Tokyo Institute of Technology : Prof. Tomoya Shibayama, Prof. Nobuaki Otsuki, Mr. Lee Yun Sub, Mr Min Htoo.