2011 **Japan Society of Civil Engineers Study Tour Grant Report**

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Recommended by The Institution of Engineers, Malaysia

Introduction

The Study Tour Grant (STG) programme invites young students from the Agreement of Cooperation (AOC) societies to Japan and provides them an opportunity to learn the latest civil engineering technologies and projects. This programme is organized under International Scientific Exchange Fund (ISEF) of Japan Society of Civil Engineers (JSCE) to promote international exchange and cooperation. This travel schedule may include visits to public and private sector organizations and major civil engineering project sites. In this year, the programme was held from 21 August 2011 to 28 August 2011.

The tour was scheduled by JSCE as follows:

	Date	Time	Events
1	8-21-Sun	AM	Arriving at Narita Airport(Ms. Chua, Ms. Sushma and Mr. Abdulla)
		PM	Arriving at Narita Airport (Ms. Anjenine)
2	8-22-Mon	10:00-11:00	Briefing at JSCE Head Quarters, Tokyo Move to Tsukuba
		13:30-17:00	Public Works Research Institute, Tsukuba Move to Tokyo
3	8-23-Tue	AM	Free
		14:30-17:00	Visiting construction site of Obayashi Corporation at Funabashi, Chiba
4	8-24-Wed	10:00-12:00	Visiting Kajima Technical Research Institute, Tokyo

		14:30-16:00	Visiting Waseda University, Tokyo
		Evening	Move to Kyoto by Shinkansen
5	8-25-Thu	10:30-12:30	Visiting Disaster Reduction and Human Renovation Institution
		14:00-17:00	Visiting Akashi Kaikyo Bridge
6	8-26-Fri	Leave at 7:50	Attending The 13th International Summer Symposium at Kyoto University (Presentation, Lecture, Party, etc.)
		PM	
7	8-27-Sat	8:00-15:00	Kyoto Sight Seeing
		16:00-19:00	Return to Tokyo by Shinkansen Mr. Abdulla and Ms. Sushma move to Haneda Airport.
		Evening	Ms. Chua and Anjenine will check in the hoterl around Narita Airport.
8	8-28-Sun	Early	Mr. Abdulla and Ms. Sushma leave.
		AM	Ms. Chua and Anjenine will check out and leave.
		PM	

In year 2011 STG programme, JSCE has invited total number of four undergraduate students in civil engineering. The detail of the participants is shown as below:

1. Chua Yie Sue

   University Science Malaysia

2. Sushma Chaudhary

   School of Civil Engineering and Architecture, Nepal

3. Anjenine Mae S. Guanlao

   University of Philipines, Diliman

4. Md. Abdullah

   Bangladesh University of Engineering and Technology

Japan Society of Civil Engineers Headquarter, Tokyo

On 22 August 2011, we had visited the Headquarter of JSCE which is located in Yotsuya. We were given briefing about the STG programme, the itinerary and the introduction about JSCE.

JSCE was established in 1914 with a mission to contribute to the advancement of scientific culture and the development of society by promoting the field of civil engineering, developing civil engineering activities and improving civil engineering skills.

JSCE has over 40000 members and holds 8 regional Chapters and 3 International Sections. Cooperation Agreements have been concluded with 22 similar overseas societies.

Public Works Research Institute, Tsukuba

The aims of PWRI is to improve civil engineering technology by conducting studies on civil engineering techniques, experiments, research and development as well as guidance and diffusion of the research achievements.

When we reached PWRI, we were given introduction of PWRI by DVD in auditorium. The organization, priority research and overseas cooperation were introduced by DVD. After that, we listened to the presentation of Integrated Flood Analysis System (IFAS) from International Centre for Water Hazard and Risk Management under the auspices of UNESCO (ICHARM). This tool provides effective and efficient flood forecasting in developing countries.

Memorial picture taken in PWRI

Following are the laboratories that we had visited:

We were taken to high speed driving on test track. The road related experimental facilities for driving safety of road traffic were explained watching from a car window. There were full-size test tunnel, traffic sign test bridges, experimental facilities for lighting and experimental facilities for impact tests.

The picture above shows the steep turning on the test road. Vehicles are allowed to drive up to 130km/hr.

Geotechnical Dynamic Centrifuge

Earthquake Engineering Laboratory

Vibration Laboratory

The picture above shows the shaking table for the testing of structure under vibration.

Dam Hydraulics Laboratory

Pavement Test Field

Construction site of Obayashi Corporation at Funabashi, Chiba

Obayashi Corporation is known as one of the leading construction company in Japan. We had visited the construction of interchange and underground tunneling job at Higashi Kanto EPWY to avoid the heavy congestion at National Route 357.

The construction map

The company has used Ultra Rapid Under Pass (URUP) to construct the tunnel. The URUP method is a newly developed shield tunneling method in which a shield machine is launched at the ground level, a tunnel is driven under a thin overburden layer without using the ground surface, and the shield machine arrives at the target point at the ground level. The URUP can shorten the construction period to 30-50 %.

Group photo at the tunnel

Kajima Technical Research Institute, Tokyo

The Kajima Technical Research Institute is at the heart of Kajima Corporation research and development activities to help the company to provide technical support and consultations for designing, implementing and improving advanced structures. This is a private owned research institute thus we were not allowed to take picture in the compound. We had visited Tabitakyuu Complex and Nishi-Chofu Complex. There are many laboratories in the research institute and each laboratories focus on specific topic.

We were exposed to the wave maker in a laboratory to evaluate the effect of waves to underwater structures. The wave is made in a large size basin and the facility can produce multi-directional irregular wave and tsunami wave.

Besides, we saw 3-Dimensional shaking table with two types of shaking table simultaneously. The main table mainly reproduces earthquake ground motion, while the small table reproduces large long period ground motions.

We were also introduced to rubber seismic isolation technology which is highly recommended in structural design technique for buildings and bridges in highly seismic areas, that is, areas most susceptible to earthquakes. Providing a base isolation device this between the building and the ground can minimize the level of earthquake force transmitted to the buildings by between one-half to one-third.

Waseda University, Tokyo

We had visited to Water and Environment Engineering Department under Dr Yutaka Sakakibara. Dr Sakakibara and his postgraduate students had presented their research related to pollutant removal and water recycles. For international student, they also shared with us the campus life in Waseda University and the life study abroad. After the presentation, the students showed us their research and equipments in the laboratories.

Waseda University

Dr Sakakibara and his postgraduate students

Disaster Reduction and Human Renovation Institution, Kobe

This is the Great Hanshin-Awaji Earthquake Memorial. 17 January 1995, a day which cannot be forgotten by all the Japanese, especially those who stay in Kobe. An earthquake of magnitude 7.2 on the Richter Scale struck the Kobe region of south-central Japan. The ground shook for only about 20 seconds but in that short time, over 5,000 people died, over 300,000 people became homeless and damage worth an estimated £100 billion was caused to roads, houses, factories and infrastructure. This institution offers programs for the visitors to learn the effects of the Great Hanshin-Awaji Earthquake and lessons learned from the experience that should be shared with younger generation. Besides, it also helps people to have better preparation against disaster.

Akashi Kaikyo Bridge

Akashi Kaikyo Bridge is known as the world longest suspension bridge with total length of 3911m. We were introduced to the history, construction method and maintenance of the bridge.

The red color circle shows the tower that we were brought to. We took the lift to the top of the tower which is the support of the bridge. It is 289 m above sea level.

Dr Itoh together with us.

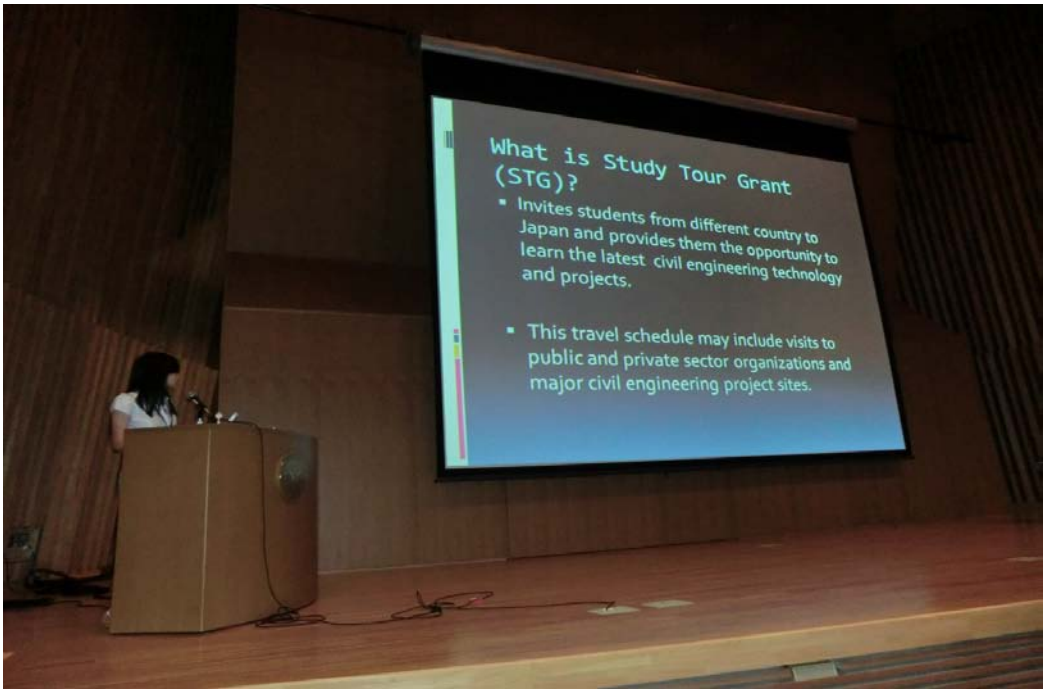
The view of Maiko city taken from the top of the tower.

13th International Summer Symposium in Kyoto University

We had the opportunity to attend to 13th International Summer Symposium in Kyoto University. This symposium is also one of the programs under the International Scientific Exchange Fund. The objective of the symposium is to provide a platform for exchanging among Japanese young engineers and their international counterparts. Every participant was given 9 minutes for the oral presentation and 4 minutes for the question and answer session.

I had presented my STG report in the symposium and had received inspiring comments.

Kyoto University



I was presenting my STG report.

Group photo at the reception party after the presentation.

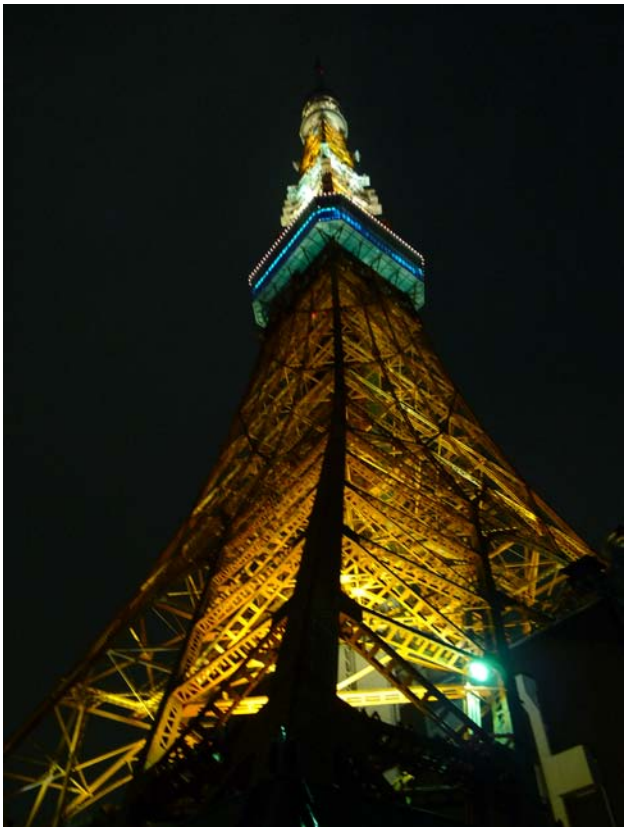
Kyoto Sightseeing

Higashi Honganji

Nijo Castle

Kinkaku-ji

At our free time in Tokyo, we had also visited to the famous tourism area like Toyko Tower, Sensoji Temple and Akihabara.



Tokyo Tower

Sensoji Temple

Akihabara, electric and animate world

Conclusion

I would like to thank Japan Society of Civil Engineers for giving me a chance to participate in the study tour. This is my first time visiting Japan. It is an amazing experience and a great opportunity for me to learn and be exposed to the engineering expertise that is famous of Japan. I can interact and share information and knowledge in the field of civil engineering with people from Nepal, Bangladesh, Philippine and Japan. I am also very thankful that I am given the chance to see Japan in a meaningful way and to visit people and places.

Besides, I would like to thank The Institute of Engineers, Malaysia for nominating me as the representative from Malaysia to attend this exchange programme. I am exposed to different culture and have exchanged knowledge with people from different country.

Lastly, I would also like to thank Mr Yanagawa, Dr Itoh and Ms Shibuya for their hospitability to bring us around in Japan.

Mr Yanagawa

Dr Itoh

Ms. Shibuya