

Study Tour Grant 2018 Report

Supported by International Scientific Exchange Fund-ISEF

(Japan Society of Civil Engineers -JSCE)

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Organization by Thailand Section of Japan Society of Civil Engineers

1. Introduction

1.1 About JSCE

Japan Society of Civil Engineers (JSCE) was established in 1914 with the purpose to contribute to the advancement of scientific culture by promoting civil engineering activities. Since its establishment, JSCE has achieved the goal, through various activities such as scientific exchange among members or researchers with social involvement, etc. In recent years, the JSCE membership has increased dramatically, with a current membership around 39,000, who are engaged in wide-ranged activities around the world.

With the arrival of the 21st century, JSCE has reconfirmed its goals to exert the following perpetual efforts

- 1) To propose future social infrastructure development from civil engineers' perspective,
- 2) To acquire a good relationship with the society,
- 3) To promote the technological research and studies at a higher degree level, and
- 4) To evaluate public works from a neutral standpoint, and to reach a social standards.

In addition, JSCE will implement new programs such as Civil Engineers' Qualification System, Continuing Professional Development, etc., for creating an excellent environment where civil engineers can widely assist international communities, and contribute civil engineering technologies to amenities of the people both in and outside of Japan [1].

1.2 About Study Tour Grant (STG)

JSCE Study Tour Grant (STG) is a special program which invites the civil engineering students (nominated by the AOC) who are interested in Japanese civil engineering technology for one week in Japan. This program is supported by International Scientific Exchange Fund (ISEF). The program includes visit to project sites and research institutes, meet leading civil engineering professionals and share their projects/experiences with other students [1].

1.3 Application procedures and results

I knew about the STG programmer announcement from my advisors in March, 2018. The program is interesting for it provides a chance to visit public and private organizations and civil engineering project sites. These will give the benefit and valuable knowledge to civil engineering students who want to study and work with an engineering organization in Japan. Thus, I was interested to join STG program. Later, in the beginning of May, I received good news from the announcement of STG participants and invitation letter from JSCE. A total of 7 participants would also join the program from different countries: Mr. Ngoc Lan NGUYEN (Vietnam), Ms. Khaliunaa Darkhanbat (Mongolia), Ms. Khin Phyu Phyu Thandar (Myanmar), Mr. Ali Gürkan GENÇ (Turkey), ENGR. AMIE LOU G. CISNEROS (Philippines), Mr. ANINDYA SAMYA SAHA (Bangladesh), and me (Mr. Jetsada Kumphong, Thailand).

2. JSCE Study Tour Grant (STG) in 2018

Aug. 26: I arrived in Bangkok by TG2047 in Japan by TG0642 and living at Tokyo.

Aug. 27

Section: Attend a STG orientation session with the ISEF Committee. Visit Kajima Technical Research Institute

In the morning, I visited KAJIMA Technical Research Institute (KaTRI). KaTRI was established as the first research institute in the industry (1949). KaTRI's missions include research and development, technical cooperation & consultation and training & disseminating information. Furthermore, in terms of a famous research institute, KaTRI covers an extremely wide field of technology: civil engineering, building science, disaster prevention and environmental consideration. Moreover, they have been expanding advanced technologies for a better life through development of various infrastructures. The STG program visit covered Shaking Table Laboratory, Wind-Tunnel Laboratory, Concrete Laboratory and Large-size Structural Testing.

Section: Visit Tokyo Outer Ring Road construction site

In the afternoon, I visited Tokyo Outer Ring Road construction site. The Tokyo Outer Ring Road (GAIKAN) is approximately 85 km long and connections are within an approximate 15 km radius from the center of Tokyo. By dispersing the inflow of traffic that passes through the center of Tokyo, the Tokyo Outer Ring Road eliminates the chronic traffic jam in the Greater Tokyo Area. For the 16.2 km section (between Kan-etsu Expressway and Tomei Expressway), a deep-bore tunnel structure has been adopted in order to minimize effects on the living and natural environment in the area along this section. The project was initiated in 2009 by the central government, and East Nippon Expressway Company and Central Nippon Expressway are moving forward with construction [2]. I learned the infrastructures on highways and transport systems. Japan is a developed country with systematic infrastructures especially road systems.



Fig. 1 Photo at Tokyo Outer Ring Road construction site

Aug. 28

Section: Visit Railway Technical Research Institute

In the morning, I visited Railway Technical Research Institute (RTRI). RTRI was established by the Minister of Transport, Japan (1986) [3]. RTRI has missions including research and development, technical cooperation & consultation and training & disseminating information. RTRI covers an extremely wide field of technology in civil engineering and railway. The STG program visit included Lobby and Maglev Exposition, Track and Roadbed Testing Equipment, Large-scale Shaking Table and Rolling Stock Test Plant and Large-scale Rainfall Simulator. I got to learn the innovative technologies and systematic infrastructure for Railway and also obtained the overview of many research studies by the Railway Technical Research Institute.





Fig. 2 Photo at Railway Technical Research Institute

Aug. 28

Section: Visit Shimizu Institute of Technology.

In the afternoon, I visited to SHIMIZU Institute of technology. Shimizu Institute of technology was established as the research section under the design department of the head office (1944) [4]. SHIMIZU's missions include research and development, technical cooperation & consultation and training & disseminating information. SHIMIZU covers an extremely wide field of technology: civil engineering, building science, disaster prevention and environmental consideration. The STG visit program included advanced earthquake engineering laboratory, Geotechnical centrifuge laboratory, Wind-Tunnel Laboratory, Concrete Laboratory and Large-size Structural Testing Laboratory. I learned the innovative technologies and systematic building design and environment system in Japan. I am interested in how engineer road and bridge design and maintenance can prevent damage from earthquake or road surface collapse so that I can apply in Thailand.



Fig. 3 Photo at SHIMIZU Institute of technology

Aug. 28: I go to Sapporo, Hokkaido by ANA 75 on 06.00 pm.

Aug. 29

Section: Participate in the International Summer Symposium, JSCE Annual Meeting at Hokkaido University

In the morning, I got the new experience in 20th International Summer Symposium to present my research on the topic “Motorcycle Helmet Use Intention with The Theory of Planned Behavior, Transtheoretical Model and Stages of Change” at Hokkaido University. This study was aimed for traffic safety in Thailand.



Fig. 4 Photo at Hokkaido University

Aug. 29

Section: Go on a field trip to the Ishikari area.

In the afternoon, I visited the Museum of Ishikari River. The flood damage in 1898 led to the establishment of the Hokkaido Flood Control Survey Committee as well as the full-fledged execution of flood control projects. Dr. Bunkichi Okazaki systematically carried out investigations and surveying, starting in 1899, only for the area to be hit by yet another flood in 1904, this time larger in scale than the one in 1898. Dr. Okazaki estimated the flow rate of this flood at 8,350 m²/s and devised an improvement plan. This was reported in 1909 in the “Ishikari River Flood Control Planning Survey Report” [5]. The Museum of Ishikari River has missions including research and development, water development and environment. The STG program visit included River Museum, Canal Sluice, Ishikari River Drain and Ishikari River Estuary. I learned the technology in Water management and the main environmental system in Hokkaido, Japan.

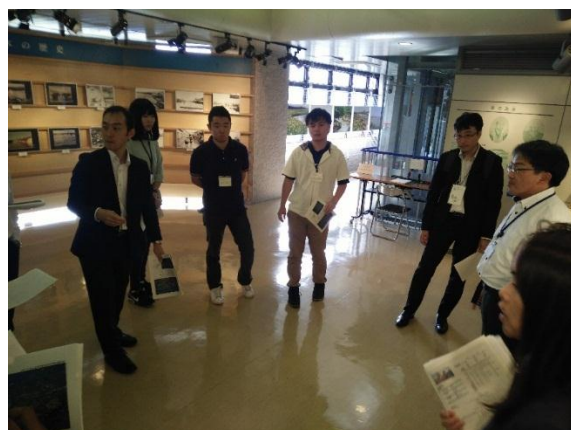




Fig. 5 Photo at the Ishikari area

Aug. 29

Section: Participate in the Networking Reception in the evening



Fig. 6 Photo with Dr. Samart Ratchapolsitte, President in Thailand Section of Japan Society of Civil Engineers

Aug. 30

Section: Visit to Ishikari Port Ishikari LNG Terminal Station

In the morning, we visited Ishikari Port Ishikari LNG Terminal. Ishikari LNG Terminal was completed in 2012 with only one storage tank commissioned until the second tank was commissioned in 2016 allowing for unloading of a full LNG carrier. The third tank was not commissioned and construction of the fourth tank begun in June of 2016, both of which are owned by Hokkaido Electric Power. The terminal will provide fuel for a large-scale gas-fired power plant being constructed at Ishikari Bay New Port [6]. I got a valuable experience in STG program. These will give the valuable knowledge for young civil engineering who plan to work with a Japanese company in Japan. I learned how the company manage connection lines and energy control for developing transport especially maritime transport including gas pipes, ship.





Fig. 7 Photo at Ishikari Port Ishikari LNG Terminal Station

Aug. 30

Section: Visit to Toya Geopark

In the afternoon, I visited Toya Geopark. The Toya-Usu UNESCO Global Geopark is a geopark with Lake Toya at its center. Looking for the donut shape on a map of Hokkaido, you'll find a donut-shaped lake (10 km in diameter) in southwestern Hokkaido. This is Lake Toya. Surrounded by mountains, the lake resembles a large pot. Approximately 110,000 years ago, an eruption caused a huge depression to form, and the lake formed when the depression filled with precipitation. Such lake is called a caldera lake [7]. The STG program visit covered Toyako Visitor Center, Volcano Science Museum. I learned engineering road and bridge design and maintenance to prevent damage from earthquake or disaster prevention and management that I can apply in Thailand.





Fig. 8 Photo at Toya Geopark

Aug. 30: I go to Tokyo by ANA 4732 on 06.00 pm.

Aug. 31

Section: Go on a sightseeing in Tokyo (including TOKYO SKYTREE)

In the afternoon, I went on a sightseeing in Asakusa temple and Tokyo skytree.

In the evening, I had dinner with the ISEF members.





Sep. 1: I arrived in Thailand by TG 0641 in Khon Kaen City by TG2046



"We Will Go Forward Together!"

3. Speech for 2018 STG

At the beginning, I would like to express my gratefulness to Japan Society of Civil Engineering for supporting me to the “2018 Study Tour Grant (2018 STG)”. Moreover, I would like to thank Suzuki-san, Yoshizawa-san and other staff from the companies where I visited for the hospitality, especially Shibuya-san, who helpfully organized everything. Also, thanks to my lovely international friends who are compassionate and friendly. I was at first scared of how to do activities and how I would be able to communicate. However, in the real situation everyone was very friendly, I feel very grateful and feel like home. For the “2018 STG”, although this is the third time to travel in Japan, I am excited to study the different technologies and education in Japan and also the knowledge in civil engineering. I saw the great infrastructures and got a lot of knowledge in civil work from the research institutes and construction sites. Besides, in terms of research I also got inspirations and new idea from the 20th International symposium at Hokkaido University that would stimulate me to find my research topics. Finally, although it was a short period in Japan, I am so impressed with all excellent programs that provided me the valuable experience and motivation in civil engineering. Furthermore, I had the opportunity to create incredible experiences and a good relationship with Japanese companies and Japanese organizations. All knowledge that I got will be useful and contributing to my work and society in the future.

4. Conclusion

In conclusion, I learned the following things from the program:

1. Innovative technologies and systematic infrastructures in Civil Engineering, the overview of many research studies that I can apply in Thailand in the future or share information to young civil engineering students and Thailand Government.
2. The new concept of structural design and disaster prevention plan. These are useful for preventing death tolls from disasters in the developing countries like Thailand. I believe that if the country has a good infrastructure, it will improve the quality of life of the citizens.

Overall, I am impressed with the JSCE team because that program has been so effectively conducted and was very interesting.

References

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