

JSCE Study Tour Grant 2001
Study Tour Report
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1. INTRODUCTION

The Vietnam Construction Association (VCA) and Japan Society of Civil Engineers (JSCE) have entered into the Cooperation Agreement in April 2000 in Hanoi, Vietnam. This important event was highly appreciated by VCA and its members, especially Vietnamese civil engineers as all of them well understand the advanced civil engineering technologies of Japan. These civil engineer members have been working with Japanese engineers and specialists in Vietnam in various fields such as transport infrastructures, urban development, environmental protection, manufacturing facilities, office buildings, etc.

It was pleasure for me to receive an invitation from JSCE in May 2001 to visit Japan under a Study Tour Grant 2001 provided by JSCE as a representative from VCA. Due to the limited time, a tight itinerary was arranged from 8 to 16 July 2001 in Tokyo, but the visit was not focused on a particular subject at that time.

I am a civil engineer and have been working as a Business Development Consultant for the Vietnam Consultant Corporation for Industrial and Urban Construction, under the Ministry of Construction from 1984 and I was elected as Vice Secretary General of VCA in 1999.

The proposed visits were excellently arranged and adjusted including urban development, environment facilities, transport facilities and equipment for construction works, which Japan has much advanced technologies and experience. The main purpose of my visit is to try to get a view of civil engineering development in Japan and to of its experience in management skills and technology application as much as I can.

This report presents my experiences and my thoughts during my visit in Tokyo.

Due to the changing of flights, my journey took almost more than 24 hours from Hanoi via Bangkok to Narita. I entered Hotel Edmont at 14:00, and the visit started immediately.

The organizations and sites visited were:

Japan Society of Civil Engineers (JSCE)

Shimizu Corporation & Ochiai wastewater treatment plant

National Institution for Land and Infrastructure Management

Independent Administrative Institutions - Public Works Research Institute, Port and Airport

Research Institute

Obayashi Corporation & Shinagawa Intercity Project, Shinkansen Shinagawa Station Project

Oriental Consultants Co., Ltd.

Kajima Corporation - Kajima Technical Research Institute

Housing Development Corporation

2. THE JAPAN SOCIETY OF CIVIL ENGINEERS (JSCE) AND THE STUDY TOUR GRANT

The visit to JSCE was held with the following attendances:

Mr. Furuki Moriyasu - Executive Director

Mr. Masashi Matsuo - Secretary General

Mr. Yoshikawa - Manager of International Affairs Division

Mr. Yasumitsu Wantanabe - Chief Secretary of International Exchange Fund Committee

Mr. Naoyuki Kumagai - International Affairs Division, and myself

After briefing of the JSCE's Study Tour Grant and JSCE by Mr. Yoshikawa, I was very honored to deepen my understanding in JSCE's history and activities. I have summarized as follows:

JSCE was established in 1914 with objectives to "**contribute to academic culture through the promotion of civil engineering and development of civil engineering services**"; JSCE has attracted a large number of civil engineers to contribute their efforts in both academic and technical issues for the development of Japan.

The number of JSCE's members grew from 43 in the beginning up to more than 40,000 today. JSCE has an effective system through the work below:

Publication of Periodicals for Mutual Communication among Civil Engineers

Editing of Books and Publications on Civil Engineering

Open "Place" for Presenting the Results of Studies and Researches

Presenting Awards to Promote Development and Further Research in Civil Engineering

Civil Engineering Library

International and Domestic Communication with Relative Academic Societies and Associations

Cooperation in the Construction of Social Capitals

To implement these works, JSCE established more than 40 committees acting in various

fields from research & studies, public relations, planning, publishing, international affairs, civil engineering library, to membership and general affairs. With 8 branch offices located from North to South of Japan, JSCE has a nation-wide network to support civil engineers and created a close communication partnership with the local and central governments in the field of civil engineering.

The Study Tour Grant is a program provided by the International Scientific Exchange Fund to promote mutual understanding and cooperation between JSCE and overseas Societies/Institutions of the Civil Engineering Field. The purpose of this program is to invite engineers from overseas Societies/Institutions to Japan to assist them in understanding the actual status and activities of civil engineering in Japan.

From the beginning of the Study Tour Grant in 1992, 8 civil engineers from overseas Societies/Institutions were invited to Japan. All recipients of the Study Tour Grant were expressing their honor and interest in getting a real current status of civil engineering in Japan by visiting projects and discussing with Japanese civil engineers.

3. SHIMIZU CORPORATION & OCHIAI WASTEWATER TREATMENT PLANT

The meeting was arranged by Mr. Naoyuki Kumagai (JSCE) and Mr. Yasumitsu Wantanabe (Shimizu Corp.) -Chief Secretary of International Scientific Exchange Fund Committee of JSCE, we visited the Tokyo Metropolitan Government where a discussion was held with Mr. Jun Nishikawa (Shimizu Corp.) and Mr. Katsumi Baba - Director of Ochiai Treatment Plant Sewerage Bureau.

Shimizu Corporation is among one of the biggest contractors in Japan receiving worldwide fame in its activities including Vietnam. The range of activities is from planning and proposals, design, construction, civil engineering, building renovation, building management, plant engineering to R & D.

With the basic principles: High Quality and Environmental Harmony - Shimizu Corporation has proactively sought new challenges and endeavored to create structures that are tailored to customer needs. As a civil engineer I am very interested to learn about the experience of Shimizu Corporation in the field of Civil Engineering. During the last days of my stay in Japan, I was luckily invited to visit one of the most mega-project in the Bay of Tokyo, which is the Tokyo Wan Aqua-Line. But first I would like to mention a few words about Ochiai Wastewater Treatment Plant (Ochiai WTP) started in 1964, Ochiai WTP occupies a large area about 84,820 m² located near Shinjuku Street and has a filtration capacity of 450,000 m³/day. This facility serves most parts of Nakano Ward and a part of Shinjuku, Setagaya, Shibuya, Suginami, Toshima and Nerima Wards, which account for a total of 3,506 ha and 781,000

inhabitants. The plant was equipped with a normal activated sludge process, whose process is to filtrate upwards with sand.

The most impressive was the plant's output water quality displayed at a park "Village with a little stream" and "Ochiai central park" through micro-filter and reverse-osmosis filter where children can enjoy bathing safety and sanitarily. This shows all the technology and management methods applied inside the plant. The other is an emergency information system modernized for people at their homes or on roads, a key for information exchange and cooperation with people, was promoted 24 hours/day and 6 days/week. We well understood why the plant has gained the certification on ISO 14001 in this field.

4. THE NATIONAL INSTITUTION FOR LAND AND INFRASTRUCTURE MANAGEMENT (NILIM) - MINISTRY OF LAND, INFRASTRUCTURE AND TRANSPORT

Together with Mr. Naoyuki Kumagai and Mrs. S. Nakajima we started the second day by a bus journey to Tsukuba-shi where the National Institute for Land and Infrastructure Management is located. At the Institute we met Mr. Tomomitsu Fujii - Director-General, Mr. Masahiro Ishida - Deputy Head, and Ms. Sekiko Arakawa.

NILIM is a new institute established on April 1, 2001 and acts as an experiment and research institute of the Ministry of Land, Infrastructure and Transport. The responsibility of NILIM is to integrate research departments involved in technology policies at the Public Works Research Institute, the Building Research Institute and the Port and Harbor Research Institute of the Ministry of Land, Infrastructure and Transport.

In practice, the Institute's activities arm all those policy-oriented researches and related actions including: research and development in the policy planning process; research and development for establishing technical standards based on relevant legislation; and research and development for administering businesses under the direct control of the government and providing technical guidance to municipalities, etc. under relevant legislation.

With 12 departments NILIM can carry out such researches and development in response to the needs of the people and of the society by taking advantage of the benefits of integration. We have learned that at present the Government of Japan places emphasis on industrial development while the infrastructure and transport are of lower concerned than in the past years. This change may come from the fact that the infrastructure and transport systems have been sufficiency developed in Japan.

5. THE INDEPENDENT ADMINISTRATIVE INSTITUTIONS (IAIs) - PUBLIC WORKS RESEARCH INSTITUTE (PWRI)

We were warmly greeted in the meeting with Mr. Masuo Kondoh - Manager for International Cooperation, Mr. Koichiro Fumoto - Senior Researcher and Mr. Takuya Seo - Road Expert.

PWRI was reorganized into IAIs on April 1, 2001 in line with the Central Government Reform. In the past, since establishment of PWRI in 1920 PWRI has been a national organization for testing of road materials. From now PWRI will implement the goals of IAIs by autonomously undertaking efficient and effective services, research and development. With more than 200 qualified staff members and 11 departments and groups within PWRI, equipped with modern testing facilities such as those we have visited including wheel running machine, pavement test field, environmental material observation station, dam hydraulic lab, large-scale 3-dimensional shaking, dynamic geotechnical centrifuge, large-scale loading machine, etc., PWRI is in a favorable position to fulfill the priority research projects for 2001 – 2005.

6. OBAYASHI CORPORATION & TOKYO INTERCITY DEVELOPMENT PROJECT IN SHINAGAWA

At Obayashi Head Office in Shinagawa Intercity Tower B, I was met by the following attendees:

Mr. Sadafumi Inoue – General Manager of Design Department No.1

Mr. Hideki Kawamura – General Manger of Technology Department No.6

Mr. Itaru Sakamoto – Deputy Manager of Development Planning Department, and

Ms. Shoko Sato

An agenda for my visit was tightly arranged from 11:00 to 17:00 from introduction to the construction sites at Canon Building and Shinkansen Shinnagawa Station as well as Obayashi technology on 4D Virtual Tour Demo.

It started with a presentation of Obayashi Overview that provided me with a view of the Corporation's wide construction activities in big scale projects from public buildings, office buildings, medical & welfare facilities, educational facilities, training & health care facilities, sports facilities, hotels, commercial facilities, logistics centers & laboratories, plants, houses, railways, roads, power plants and a lot of projects in overseas.

An introduction of Shinagawa Redevelopment Project – the one of largest project under construction I have seen – showed the capability of the Corporation from planning and designing work, management procedures and supplying equipment for construction activities in a very complex project. This project has been selected as a major urban development in Tokyo and a new big urban project in the 21st century. The project area is approx. 14.9 ha with 6 blocks

A-1, A-2, B-1, B-2, B-3, B-4 and it was estimated that The project would be completed in 2005.

With the Construction Site Tour I (Canon Building) and Tour II (Shinkansen Shinagawa Station), I had an excellent chance to witness the high-level management and organizing on site of the Corporation as well as the use of large-scale equipment for construction work for the project. All matters on site, from technical, management to safety issues, were carefully considered by the Corporation.

At the project office of the Shinkansen Shinagawa Station Project, Mr. Harada Haruo introduced a modern technology applied in constructing the railways project in Tokyo, and the videotape presented the process of changing railway lines in only one night!

Returning to Obayashi Head Office, I was pleased to see the new technology of the Corporation: 4D Virtual Demo given by Mr. Sadafumi Inoue. I strongly believe that when this technology is more developed and applied, the civil engineering work would be more effective.

7. ORIENTAL CONSULTANTS CO., LTD.

Ms. Minako Sato and Mr. Kazuhiro Hattori received me and I was given a better understanding of the history and development of Oriental Consultants Co., Ltd. – a private consulting company in civil engineering.

Founded in 1957 as one of the first consulting firms in Japan, the Company has been developing fast and opened branch offices in all of the country's major cities. The number of employees is more impressive with 644 full time staffs, of whom 483 are professional engineering personnel, including more than 120 registered consulting engineers.

The Company provides such engineering consultancy services as surveys, research, planning, feasibility studies, conceptual and detailed design, and assistance with tenders, supervision of construction and overall project management. These services support projects ranging from urban development and redevelopment through transport studies, road and highway construction, railways, structural works, maritime works, onshore and offshore structures and other related fields.

We visited Saitama New Metropolitan Center, which the Company has been involved in providing consultancy services. This project is also very large in Tokyo with many functional units such as office building, schools, roads, hospitals, housing, water supply plant, shopping areas, wastewater treatment station, solid waste treatment facility, etc.

8. KAJIMA TECHNICAL RESEARCH INSTITUTE (KaTRI) - KAJIMA CORPORATION

My technical visit to KaTRI was warmly welcomed by the attendances below:

Dr. Kinji Ohashi, Managing Director

Dr. Hiroshi Abe, Deputy Director

Mr. Yoshinobu Nobuta, Manager, Planning Group, Planning and Administration Office

Mr. Tatsushi Kawai, Senior Research Engineer, Soil Environment Group, Environmental Engineering Department

Ms. Haruko Umehara, Planning Group, Planning and Administration Office

The technical visit included an overview of R & D activities at KaTRI, a laboratory tour, and some presentations regarding recent research topics mainly on civil engineering and environmental engineering and discussions for promoting mutual understanding.

Founded in 1949 as the first research institute of the industry of Japan, and “Turning dreams into reality” for creating harmony between people and the environment, KaTRI is at the heat of Kajima Corporation’s research and development activities to help the company create even better and more comfortable environments. At present, KaTRI has more than 300 staffs and nearly 20 laboratories equipped with modern instruments and machines in the fields of structural testing, dam construction technology, large underground storage tanks for liquefied natural gas, earthquake and micro tremor isolation systems, high-strength, high-fluidity and high performances concrete, advanced shield excavation techniques, building construction control system and others.

The visits to various laboratories and discussions on environmental issues at KaTRI were very interesting and indicated a strong capability of KaTRI as well as Kajima Corporation in carrying out a high workload in the field of construction in Japan and other countries.

9. THE INDEPENDENT ADMINISTRATIVE INSTITUTION - PORT AND AIRPORT RESEARCH INSTITUTE (PARI)

The full day of last visit was at PARI started at the Planning Division with the following attending persons:

Dr. Kazumasa Katoh, Supervisor

Mr. Yasuyuki Nishio, Head of Planning Division

Dr. Susumu Iai, Director for Special Research

Dr. Hidenori Hamada, Head, Materials Division

PARI was reorganized from the Port and Harbor Research Institute of Ministry of Transport, which started in 1946. In April 2001 the Institute was divided into an Independent

Administrative Institution and Port and Airport Research Institute and National Institute for Land and Infrastructure Management.

With more than 100 staff, most of them researchers (90), PARI contributed to a large number of National Projects such as: Kobe Port, Kansai International Airport, Breakwater at Kamaishi Port, Hitachinaka Port, International Large-scaled Minamihonmoku wharf at Yokohama Port, etc.

In the year of 2000, PARI carried out 70 Japanese papers, 61 English papers and 176 applied for patents, of which 114 patents were approved and 53 patents still under examination.

In activity, PARI complies the following excellent ideas:

Important roles:

To demonstrate the function as an international research center

To support administration through research

To return research result to people and international society

Principles:

To emphasize fundamental research

To promote research close to project site

To contribute to international society through research

The Study Tour of Research Facilities including:

Large scale testing facility

Underwater shaking table

Water bleeze serpent

Tidal flat experimental facility

Large hydro-geo flume

Mark II geotechnical centrifuge

In the discussions I was pleased to learn that the Institute has had collaborations with Vietnam in research and training programs through JICA, especially in the civil engineering field. A proposal for further cooperation with Vietnam was prepared and presented that showed a good impression of PARI people. Of course, we are looking forward to working with the researchers of PARI in the near future.

10. FINANCIAL

JSCE provided 300,000 Yen in financial support towards the Study Tour, which I have received upon arrival in Tokyo.

A breakdown among the principal items is as follows:

Air ticket Hanoi – Hong Kong – Narita	142,900
Accommodation in Tokyo (8 nights)	89,887
Daily expenses 6000 per day * 9 days	48,000
Miscellaneous (airport taxes, transport, etc.)	37,000

11. ACKNOWLEDGEMENT

I would like to express my sincere thanks to JSCE for giving me this fantastic chance to visit Japan.

Although my time in Tokyo was limited, it was a unique and most valuable opportunity in my life, not only to be in Japan to get a real view the civil engineering of Japan but also to see the beautiful country and meet hard-working and friendly people and to learn more about the Japanese culture and traditions. Finally I am grateful to all participants of the Tour as they were all extremely accommodating without exception, and their cooperation made the Study Tour a success, especially Mr. Naoyuki Kumagai and Mrs. Sachiko Nakajima who shared most of their time during my stay in Tokyo.



JSCE Headquarters (From left, Mr.Watanabe, Mr.Furuki, Mr. Nguyen Duy Thang, Mr.Matsuo and Mr.Yoshikawa)



Construction Site in Shinagawa

Annex: Itinerary Mr. Nguyen Duy Thang (July 9 – 16, 2001)

Date	Time	Place to visit	Arranged by
Jul.9 Mon.	10:30 AM 14.00 - 17.00	Arrive at Narita (NH930) Shimizu Corporation Meeting with Mr. Wantanabe (Chief Secretary of Int'l Exchange Fund Committee) Discussion on Environment and Visit at Construction Site of Tokyo Metropolitan Government's wastewater facility	JSCE Mr. Wantanabe (Shimizu)
Jul.10 Tue.	8:30 – 14:00 14:00 - 17:00	National Institution for Land and Infrastructure Management (Tsukuba) (Ministry of Land, Infrastructure and Transport) Independent Administrative Institutions Public Works Research Institute Discussion on infrastructures of industrial zone and urban transport network and visit laboratories	Mr.Nishikawa, Ms. Arakawa (NILIMI) Mr.Nagayama, Ms. Kondo (PWRI)
Jul.11 Wed.	9:30 – 10:30 11:30-17:00	JSCE Briefing of the Tour and JSCE Mr. Furuki (Chief Executive Director) Mr. Matsuo (Secretary General) Mr. Yoshikawa (Manager of International Affairs Division) Obayashi Corporation Construction Site (Tokyo Intercity Development Project-Shinagawa) Discussion on Urban development and equipment supply for construction	JSCE Mr.Kawamura (Obayashi)
Jul.12 Thu.	9:30 – 12:00 13:30 – 17:00	Oriental Consultants Co., Ltd. Discussion on consultant in Japan and visit construction site (Saitama) Kajima Technical Research Institute, Kajima Corporation Discussion on solid waste management and recycling, and visit laboratories	Mr.Hirotani (Oriental Consultants) Dr. Abe Mr. Nobuta (KTRI)
Jul.13 Fri.	10:30-16:00	Independent Administrative Institutions Port and Airport Research Institution (Yokosuka) Discussion on infrastructure and international standard, and visit laboratories	Mr. Nishio (PARI)
Jul.14	Sat.	Free day	
Jul.15	Sun.	Free day	
Jul.16 Mon.	10:00 14:55	Departure from Narita (CX509) Arrival in Hanoi	