



**JAPAN SOCIETY OF CIVIL ENGINEER**

**REPORT**

**FOR**

**2015 JSCE - STUDY TOUR GRANT**

**Supported by 75<sup>th</sup> International Scientific Exchange Fund-ISEF**

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**Co.,Ltd, Mandalay, Myanmar.**

**Represented by MES (Myanmar Engineering Society), Myanmar.**

## 1. 2015 - JSCE Study Tour Grant

Firstly, I would like to tell about my STG (Study Tour Grant) nomination. All Myanmar young civil engineers were invited from Myanmar Engineering Society to competitive STG program including questionnaire. I incidentally found this invitation from MES (Myanmar Engineering Society) Facebook in June, 2015. Therefore, I was starting prepared to competitive STG program. I choose a paper topic to present at 17<sup>th</sup> International Summer Symposium that “Reinforced Concrete Dome Structure and Construction of Aung Taw Mu Temple in Myanmar” which is my master thesis and also I estimated the cost of this project and was constructed by Aung Myin Thu Construction and Real Estate Development Co.,Ltd, Mandalay, Myanmar. After my questionnaire report, I was invited to make a presentation depend on STG questionnaire in Myanmar Engineering Society and to choose among young civil engineers. I and other one young civil engineer were nominated as excellent two candidates from Myanmar Engineering Society and they submit to Japan Society of Civil Engineer to participate STG program. In August 13, 2015, I received an email that I was announced as a nominee from JSCE to participate STG program. I really very happy and I didn’t know to show my happiness. I got great opportunities to visit in Japan and to study Japanese technologies.

JSCE Study Tour Grant (STG), supported by International Scientific Exchange Fund (ISEF), is a unique program for young civil engineers to learn Japanese civil engineering technology and projects. The STG program invites the civil engineering students who are nominated by the associated societies to Japan to stay for about one week. During our stay, we visit project sites and research institutes, meet leading civil engineering professionals and academics, and share our projects with other students. At the end of the program, we are requested to submit a report on our experiences gained in Japan to JSCE.

## 2. Itinerary

I was invited from Yoshihisa Kawahara, Dr. Eng. Chair, International Scientific Exchange Fund, JSCE to participate 2015 study tour grant program. My STG visit started from 13 to 19 September. There were five recipients from different countries; Mr. Jun Li (China), Mr. Jess Anthony Alcid (Philippines), Mr. Andi Subhan Mustari (Indonesia), Mr. Dang Quoc Su (Vietnam) and Ms. Hmwe Kyu (Myanmar) for 2015 JSCE STG visit. Each county had one representative person who is civil engineering students or civil engineers to study latest Japanese technologies from research institutes including infrastructure and land development. We had a schedule that we visited one week stay in Japan. 2015 JSCE itinerary schedule are as following table.

### Schedule for 2015- Study Tour Grant, JSCE

| Item | Date     | Time        | Events  | Attend ( by committee member) |
|------|----------|-------------|---|-------------------------------|
| 1    | 9-13-Sun | AM          | Arriving at Narita Airport  | Mr. Kawakami                  |
|      |          | PM          | Move to Hotel (Tokyo)and check in   |                               |
| 2    | 9-14-Mon | 6:45        | Time of Departure   | Mr. Kawakami                  |
|      |          | 9:20-11:50  | Public Works Research Institute, Tsukuba  | Dr.Wada                       |
|      |          | 14:30-16:30 | Tokyo-Gaikan Expressway Construction site "TAJIRI-Area Project"                                   | Dr.Ueno<br>Dr.Wada            |
| 3    | 9-15-Tue | 7:30        | Time of Departure, Move to construction site by bus   | Mr. Kawakami                  |
|      |          | 9:00-11:30  | KAJIMA Technical Research Institute, Chofu, Tokyo   | Mr. Yoshizawa                 |
|      |          | 13:30-16:00 | Construction site "JR Shinjuku Station Project"   | Mr. Kawauchi                  |
|      |          | 16:00-17:00 | Move to Tokyo Station by JR   | Mr. Kawauchi<br>Dr.Wada       |
|      |          | 17:20       | Move to Okayama by Shinkansen, Nozomi   | Dr.Wada                       |
| 4    | 9-16-Wed | 8:00        | Time of Departure, Move to Okayama University   | Dr.Wada                       |
|      |          | 8:45～       | Attending 2015 JSCE Annual Meeting /The 17th International Summer Symposium at Okayama University | Dr.Wada                       |
|      |          | 9:00-12:00  | International Summer Symposium Presentation   |                               |
|      |          | 13:30-17:00 | International Workshop for Young Engineers  |                               |
|      |          | 18:00-21:00 | Reception at Okayama Castle   |                               |
| 5    | 9-17-Thu | 8:00        | Time of Departure, Move by bus  | Mr. Kawauchi                  |
|      |          | 9:00-11:30  | Seto Ohashi Commemorative Park (Seto Ohashi Tower, Commemorative Hall) ,Yoshima P.A.              | Mr. Kawauchi                  |
|      |          | 13:30-16:00 | Construction site "Mizushima tamashima Area Road Const."  | Mr. Kawauchi                  |
|      |          | 17:00       | Move to Tokyo by Shinkansen, Nozomi   | Mr. Kawauchi                  |
| 6    | 9-18-Fri | 7:30        | Time of Departure, Move to Bus stop (Hato Bus).   | Dr.Wada                       |
|      |          | 8:30-13:30  | Sight Seeing (Bus Tour /Hato Bus)   | Dr.Wada                       |
|      |          | 13:30～      | Free time   |                               |
| 7    | 9-19-Sat | AM          | Check out the Hotel and move to Narita Airport  | Mr. Kawakami                  |
|      |          | PM          | Departure from Japan  |                               |



Photo 1, With STG recipients and Mr. Kawakami at Presso Inn, Tokyo



Photo 2, My Name Card for 2015 JSCE-STG visit

### 3. Public Work Research Institute

First day of STG visit is Public Work Research Institute (PWRI) located in Tsukuba. In the morning, our STG recipients were introduced with Mr. Jay Silla and Mr. Daisuke Fujii by Mr. Kawakami at Presso Inn. They picked up our group to Public Work Research Institute and National Institute for Land Development by bus. When we arrived in Tsukuba, we met with Dr. Kazunori Wada who is research coordinator for Land Management and Disaster Prevention at building of National Institute for Land and Infrastructure Management. After greeting with all STG recipients and our group started to study in the PWRI by bus.



Photo 3, In front of Public Work Research Institute with Dr. Kazunori Wada  
And STG recipients

We looked at the view of high speed driving test truck at the bus so we must need to fasten our seatbelt for our life safety. This pavement design speed is 100km/hr and the radius of curvature is 147.5m and the maximum angle of inclination is 28 degree in the north side loop. At south side loop of pavement, design speed is 100km/hr and the radius of curvature is 147.5m and the maximum angle of inclination is 28 degree. The pavement types are continuously reinforced concrete pavement, water drainage pavement and porous elastic pavement. Then we studied about full-size test tunnel and traffic sign test bridge. These experiences are great opportunities for me because I never seen like these test in Myanmar.



Next study in PWRI is the dam hydraulic laboratory and annex. There are many small scale dam designs and annex. I have been studied about dam construction in Myanmar when I studied as a third year student in civil engineering but I did not know how to experiment dam stability, spillway and flood control. In Japan, developed country, great improvement in dam construction and it had long history in dam construction, maintenance and improvement. There have approximately in 2800 dams and over 15m high till now. The size of this Laboratory is 120m in length and 44m in breadth and its annex size is (L70mx B29m) used for this investigation. This studying was the great experiences for me.

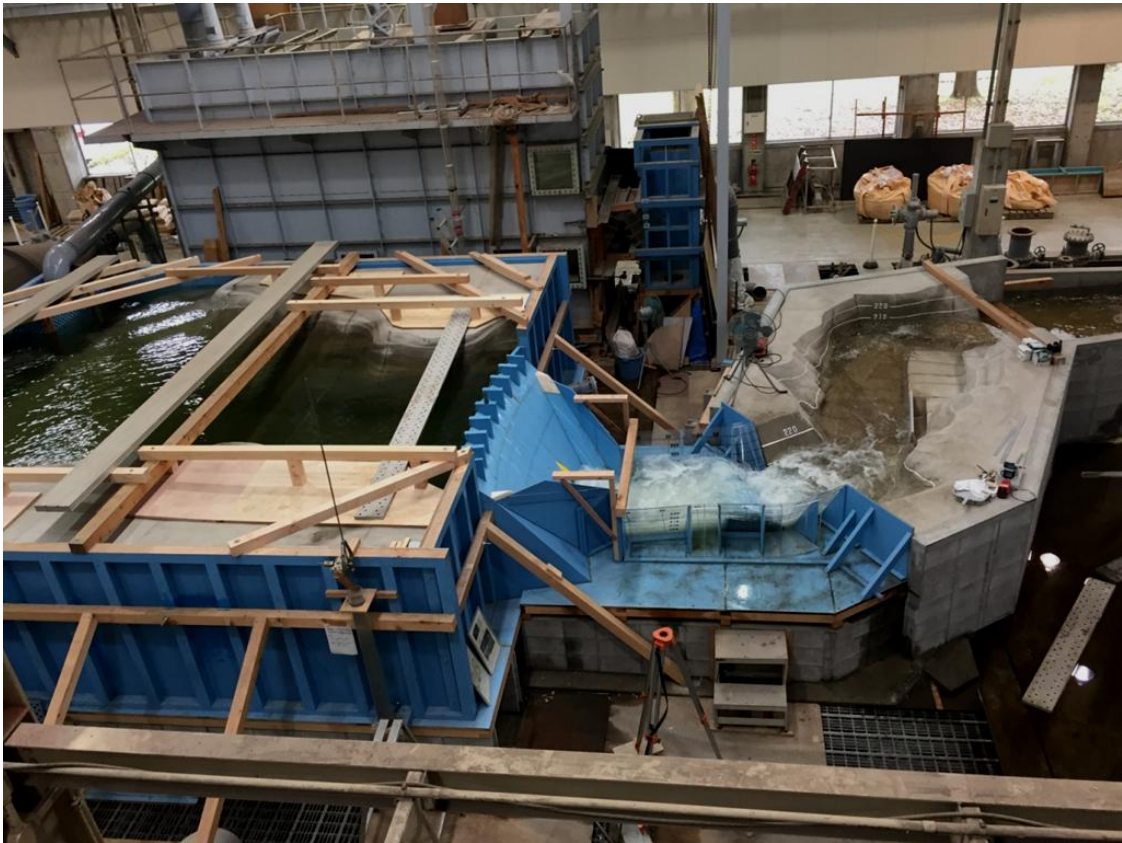


Photo 4, Dam Hydraulic Laboratory tests and annex.

After studying dam hydraulic laboratory and annex, we went to the vibration laboratory. In vibration laboratory, we seen large scale three-dimensional shaking table which is to examine a seismicity of the ground and civil infrastructure by simulating strong motion of large earthquake. In Japan, the Hyogo-ken Nanbu Earthquake caused very severe damage to civil infrastructure by its extremely strong motion in January 1995. So, we could study about shaking table in that laboratory. I got surprise because I did not know already about shaking table to examine earthquake motion. That study was the great opportunities for me. But, I did not see the operation of shaking table. So, I still want to see and study again.



Photo 5, Three-Dimensional Shaking Table

After studying vibration laboratory, we went to the structural engineering laboratory. Firstly, I found the testing machine which is the 30MN universal testing machine. Structural engineering is my interesting subject so I was very happy for studying in that laboratory. I found the bridge steel member after testing. Then, I saw some steel plates with the holes so I asked to interpreter about that plates. That steel plates are testing for welding, it made me surprising because I did not see that tests already. Moreover, I found many large machines for testing structural engineering. The 30MN large structural member testing is used for compressive, tensile, and bending tests for full scale or reduced-scale bridge member/components to evaluate the ultimate strength and the behavior to the failure. That machine is used for multi-purpose in structural engineering.

And then, our group studied about geotechnical dynamic centrifuge. That centrifuge was constructed in 1997 to perform prototype model tests in order to understand the complicated behavior of ground, earth structure and foundation and also to develop the technique to rationalize design. There are three dynamic centrifuges in Japan including PWRI. This centrifuge maximum payload is 400 ton\*G and 150G maximum acceleration with the 6.6m rotor radius. Typical centrifuge tests in PWRI are (1) centrifuge tests on embankment failure induced by liquefaction of subsoil, (2) centrifuge test on seismic behavior of underground structure during earthquake, (3) centrifuge test on residual displacement of road embankment on mountain side, (4) centrifuge test on resistance of reinforced soil walls against earthquake. Our group studied short video presentation and liquefaction sample test in that laboratory.



Photo 6, 30MN Universal Testing Machine



Photo 7, Geotechnical Dynamic Centrifuge





Photo 8, Truck test



Photo 9, Group photo in front of National Institute for Land and Infrastructure Management

#### **4. Tokyo-Gaikan Expressway Construction Site, TAJRI-Area Project**

In the noon of STG first day visit, Dr. Wada picked up our group to the restaurant to eat lunch. We ate Japanese food for lunch, the taste of that food was a little difference with Myanmar food. But, I could enjoy and I believed Japanese food must get nutritious food for me. After lunch, we went to the Tokyo-Gaikan Expressway construction site, TAJRI-Area project. That project is the large scale construction project. That project is constructed by East Nippon Expressway Company, TAISEI-TODA-DAIHO Joint Venture. Firstly, we reached to the Kanto-Brach Chiba-construction office and greeting with Dr. Ueno and construction manager. Before going to the site, we wore the safety accessories and we were explained about project with small model demonstration by construction manager. Then, we went to the site by bus. TAJRI area construction site is the work to construct Keiyo-junction Expressway and Keiyo-Road way. Gaikan-Expressway and Keiyo-JCT ramp are semi-basement the structure. The junction is made from many ramps that have different height and structure that are well calculated. We were explained about that expressway project by construction manager and we saw heavy steel structure strut including concrete casting work for retaining wall under construction. Then, we saw large machine to dig earth and big crane. I really interested in that construction because I also want to build in Myanmar like that project. Afterwards, we went back to the site office and we watched a video about that construction method. According to that video, I want to submit here to get knowledge for the reader who is interested in my report. There are three construction methods used in that project. Three methods are;

- (1) Open cut method
- (2) Shield tunneling method and
- (3) The Harmonica + Underpinning method

For open cut method, first they dig a hole and make a wall so that soil doesn't fall in. Around the junction, there is water 1 meter beneath the ground. Therefore, the wall has to be constructed until the area where the water will not come in. The wall was constructed by digging a hole and pours cement slurry together then put the H pile inside. After digging the holes around the wall, steel plates will be lined on top of the public vehicles to drive. Next, the digging machines will excavate the ground under plate and line the beams to sustain the wall. To construct the junction without stopping any traffic, they put the road aside where the road laps with their construction area and then start the construction. If the road has move to a different area, it means that the old road is under construction. They put the 2 roads at once. After the construction, the road back one by one to its original place. This is how was constructed by never stopping any traffic.

In tunneling method, a cutter is put around the steel disk which rotates and digs the hole. The height of that disk is the same height of 4 story building. This project is the large scale construction project for expressway. There are two types of digging methods. One is shield tunneling method used for ramp A. The other is the Harmonica and underpinning method used for ramp D. For the ramp A, the earth covering is shallow so, they dig it by reinforcing the surface. The point of the shield tunnel method is not to dig a tunnel bigger than the size of the disk. So, the machine will go forward by balancing the pressure of the ground. If the shield machine destroys the ground, the road may sink and may affect the pipes and cables underground. The wall of the tunnel will be made inside the shield machine. It digs the earth by moving forward, rotating the cutter face. After each turn, it will build a segment around tunnel face. Therefore, the tunnel is built after digging the path. A section of ramp A will pass through under ramp D. So, the piles of ramp A are made by mortar and then the shield machine can cut the piles and pass through. This study tour gives us great opportunities to become good engineer and we have enthusiasm to perform in our country.



Photo 10, Group photo in Tokyo-Gaikan Expressway construction site, TAJRI-Area project





Photo 11, Tokyo-Gaikan Expressway construction site, TAJRI-Area project

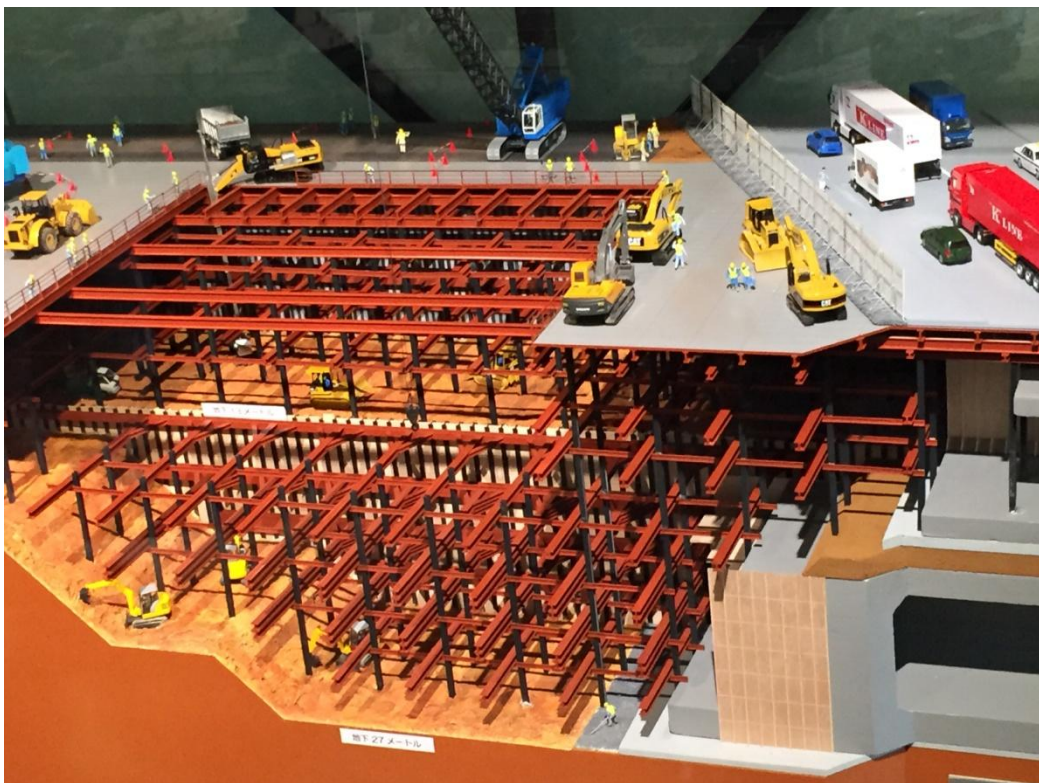


Photo 12, Small Scale Model of Tokyo-Gaikan Expressway construction site,  
TAJRI-Area project



## 5. Kajima Technical Research Institute

The motto for Kajima Technical Research Institute is “Exploring today, building tomorrow”. Another name of Kajima Technical Research Institute is the KaTRI. Therefore, KaTRI is the nick name of Kajima Technical Research Institute. There are 4 aspects in that institute. Those are civil engineering, disaster prevention, building science and environmental consideration. We studied at that institute in second day of STG visit. We reached at Kajima Technical Research Institute and we met Mr. Tesuya Yoshizawa who is General Manager, Business Development Group Construction Group. After greeting in meeting hall, we watched a video which is about Kajima Technical Research Institute and awesome video for me. Then, we started looking and studying around KaTRI area which is large compound that I seen. In KJIMA, very nice view with the trees and Mr. Daisuk Fujii told me about that tree which leaves will change red in winter, so, my feeling was fresh and active to study.

That institute works for the largest construction companies in Japan. I studied about shaking table with 6m height and 1.5m width. Then, we reached to the building to study concrete technologies and then we seen concrete sample with various strength light weight concrete ( $30\text{N/mm}^2$ ), regular concrete ( $27\text{N/mm}^2$ ) and high strength concrete. There has sample of steel fiber concrete which is used for runway of Narita airport. We were not allowed to study for some building at that day. But, we studied many researching technologies. We knew two types of damper. One damper which is made with 6 rubber layers and steel plate used not only earthquake but also vibration. Next damper is made of many steel plates layer and it can resist only for earthquake.

And then, our group went to the wind tunnel testing building. We saw small scale model of wind tunnel test and we study specifications of large boundary layer wind tunnel. The specifications of wind tunnel are maximum power (750KN, 496 rpm), diameter (4.3m), air speed (0.4-40 m/sec), path length (121.9m) and contraction ratio (5). After studying wind tunnel test, we studied about fire testing and artificial garden on the roof. Moreover, we studied about large size wave basin in ocean and hydraulic laboratory. That investigation was caused by earthquake, tsunamis, fires, storms and floods.

In the noon, we reached in main building of KJAMA area and we studied sound testing, small scale modeling room. After all, we ate lunch and took photos in front of KJIMA. I really satisfied for my great opportunities that I studied in Kajima Technical Research Institute. All of researching techniques were awesome technologies for me. Thank everyone from Kajima Technical Research Institute. Kajima Technical Research Institute (KaTRI) is one of thrilling places in STG visit.



Photo 13, With STG recipients in front of Kajima Technical Research Institute

## 6. Shinjuku Station Construction Project

Before going to Shinjuku Station, we visited to Meiji Jingu shrine. We got 20 minutes to visit that shrine area. So, I was very happy. I saw many large trees and traditional shrines building and tourists. Meiji Jingu shrine is the delightful place. Moreover, I prayed at that shrine by fixing pray card and took many photos with STG group. Then, we went to the Shinjuku station by bus. Shinjuku Station is the nation's largest-class terminal station, using 3.2 million passengers per day. Firstly, we reached Shinjuku Station office to study and greeting with all interpreters. Then, we went to the construction area by foot.

This project is the infrastructure development project in South Area at Shinjuku station. That construction includes road, building, railway, highway and over bridges. In Shinjuku station, nearly 60,000 vehicles pass along Koshu Kaido Ave. The Shinjuku over bridge provide three lanes on each side, but one of them is essentially a parking lane for taxis to pick up passengers, as well as other parked vehicles. After excluding taxis, as many as 200 ordinary vehicles parked on the curbside on an average weekday, and this number triples to 600 on national holidays. This congestion is so serve, hardly two lanes can keep open for through traffic. This is one of the major causes of traffic and effective measures must be taken to solve problem.

The aging bridge was under construction. The reconstruction begins with the replacement of the existing bents (30m width, 123m length) with the new ones (50m width, 27m length). The new bridge will have wide sidewalks to accommodate a comfortable flow of pedestrian traffic. Other parts of structure will be reinforced to provide earthquake resistance. Moreover, we studied at Shinjuku office under construction building. That building is the high-rise building with steel structure. I saw large column fixing rebar and large duct hole to fix all sanitary pipes line in the basement of that building. And then we studied about car parking areas, elevator hole and fire resistance material for steel column and beam. I never saw already like those structures especially large steel member building and I wanted to study that building construction more.

After visiting site, we came back to site temporary office, and we studied about that project by watching TV. And then, we took photos for visiting remembrance with interpreters at office. After all, we went to the Okayama by train. I indeed grateful all interpreters in Shinjuku station project for permitting site visit.



Photo 14, At Site Office of Shinjuku Station Construction Project



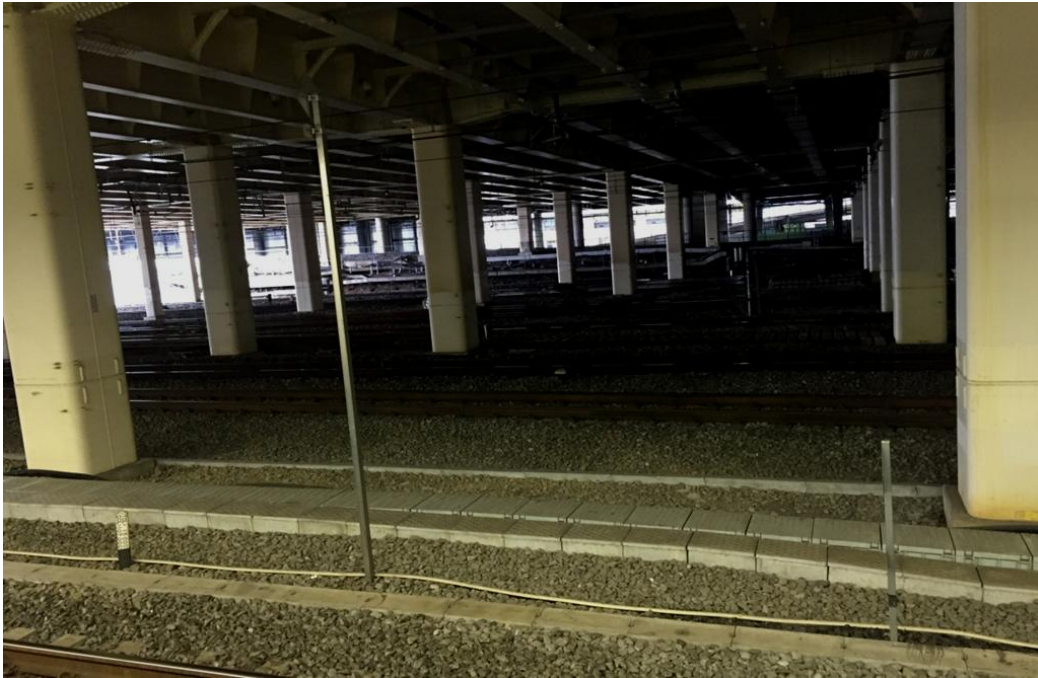


Photo 15, Railway at Shinjuku Station



Photo 16, Me at Meiji Jingu Shrine



## 7. 17<sup>th</sup> International Summer Symposium

The main objective of JSCE International Summer Symposium is to provide a platform for young engineers to examine technological advances and issues, to share their ideas and research projects, and to encourage them to find research partners and teams across languages and distance. International Summer Symposium brings together young civil engineer from over 20 countries every year. It is an excellent opportunities for young civil engineer. I am a recipient of 2015 JSCE-Study Tour Grant program. So, I made a presentation at 17<sup>th</sup> International Summer Symposium. That Symposium was held at Okayama University, Tsushima Campus, OKAYAMA in 16 September 2015. My presentation was held at Seminar room CS-5 as a STG-03 recipient. The title of my presentation is “Reinforced Concrete Dome Structure and Construction of Aung Taw Mu Temple in Myanmar”. That project was constructed by Aung Myin Thu Construction and Real Estate Development Co.,Ltd in Mandalay, Myanmar and also my research thesis. So, I made a presentation with two parts that is dome structure and dome construction of Aung Taw Mu Temple. We got only 7 minutes for presentation and 2 minutes for questions and answers. I really satisfied for my presentation because I had a chance to present my master thesis and our Buddhist religious Dome Structure Temple represented by Myanmar country. That was a short presentation. But, I could study other students’ presentations with various fields of civil engineering from different countries. Some presenters are master and doctoral students studying in Japan. This is the great opportunities to study civil engineering technologies for us.



Photo 17, My Presentation at 17<sup>th</sup> International Summer Symposium

## 8. JSCE International Young Civil Engineer Workshop

Then, our STG group ate lunch with Mr. Kawakami at canteen of Okayama University campus. After lunch, our STG recipients and other international students and JSCE coordinators are participated at International Workshop for Young Civil Engineer in Okayama University. At workshop, we made a very short group presentation with the title of “Why did You come to Japan?” with expectations, reality and future. In workshop, we discussed about universities in Japan, laboratories in universities and language between Japanese people and international students in Japan. Our discussion finished, we made a short presentation which was not so difficult and very freedom and we got happiness with various questions. In the evening, we went to the Okayama Castle for dinner reception by bus. At that time, my feeling is very satisfied and happy for meeting with all international civil engineers. We enjoyed Japanese foods and drinks in Okayama castle. Then, I had a greeting with other JSCE members who will go to Myanmar next day. They spoke me with Myanmar language, so, I got a surprise for their Myanmar language. After eating dinner, we looked inside castle to upstairs and I took photos by wearing Japanese traditional dress.



Photo 18, Our Group presentation at International Young Civil Engineer Workshop



Photo 19, Me at Okayama University



Photo 20, Me, Mr. Jess and Mr. Su in front of Okayama Castle

## 9. Seto-Ohashi Bridges

Fourth day of STG visit, we visited to Commemorative Park (Seto Ohashi Tower, Commemorative Hall). The central route, Seto-Chuo Expressway and JR Seto-Ohashi Line is for both a highway and a railway. The total lengths of highway and railway are about 39 kilometers and 32 kilometers, respectively. They were opened to traffic in April 1988. This route consists of six long-span bridges (Shimotsui-Seto Bridge, Hitsuishijima Bridge, Iwakurojima Bridges, Yoshima Bridge, Kita Bisan-Seto Bridge and Minami Bisan-Seto Bridge) which cross the 9.4 kilometer strait. The upper and lower decks of the stiffening girder are for highway traffic and railway. These six long-span bridges are called the Seto-Ohashi Bridges.

Our group visited at the tower of Seto-Ohashi bridges. On the top of tower, we could see nice view of mountains, the sea and beauty of bridges. That tower is very high and function of that tower is to control the main cable. We saw the large suspension bridges the other side of tower. There has office to check and maintenance for bridges on everyday conditions. I had a chance to study about steel connection of that bridge structure. While we are studying, so many cars were passing along the highway of that bridge and also we saw the train along the railway of that bridge. At the top of tower, I could not stop photos taking because of nice view, awesome view and fresh feeling. Then, we came down from the tower and we studied the picture of step by step bridge construction. There are 10 steps of that bridge construction. They are;

- (1) underwater blasting
- (2) underwater excavation
- (3) setting of caissons
- (4) casting the underwater concrete
- (5) casting the concrete in air
- (6) erection of tower
- (7) cable erection
- (8) girder erection for the suspension bridges
- (9) girder erection for the cable-stayed and truss
- (10) finishing operations

This study was the excellent opportunities for us. After visiting those bridges, we ate lunch near Seto-Ohashi Commemorative Park (Seto-Ohashi Tower, Commemorative Hall). I really thankful to all interpreters related with Seto-Ohashi bridges. Then, we directly went to the Mizushima Port Birdge construction project.





Photo 21, Seto-Ohashi Bridges



Photo 22, Me, on the top of Seto-Ohashi Tower



Photo 23, View of Seto-Ohashi Bridges



Photo 24, Me with Dr.Wada at Seto-Ohashi Bridge

## 10. Mizushima Port Bridge

The last visit place at Okayama was the superstructure for Mizushima Port Bridge construction. We reached to study bridge construction and we wore safety uniform and waited the boat to look bridge construction with the engineers from Yokogawa-Yokogawa Sumiki Birdge Joint Venture. Then, we rode the boat going to bridges under construction. Let me submit the outlines of that project that I got some datas from Yokogawa-Yokogawa Sumiki Birdge Joint Venture. The construction of Mizusima Port Bridge in Mizushima-Tamashima Road is infrastructure project which aims to strength its logistics functions connection between the production base in Mizushima area and the physical distribution base, to improve safety and convenience for cyclists and pedestrians and to provide anti-earthquake reinforcement against big earthquakes. It is 2,564m long road connecting between Tamashi side (Tamashima Portside Arterial Road) and Mizushima side (National Route 430).

According to their time schedule of works, bridge construction was stared from July 8, 2014 to March 24, 2016. The major works of the project are fabrication, shop painting, transportation, site assembly, erection, bearings, site jointing, site painting, accessories, scaffolding and temporary work. In the boat, we were explained about that bridge construction with map of location by Mr. Yuji KOBAYASHI. I saw port and the cranes used in construction. Moreover, I studied the composite slab, bridge girders and bridge pier. Construction was completed steps by steps installation. Bridges girders and composited slab were installed on the bridge pier. After installing bridge girder, the barge is moved to downriver site of erection point to anchor. Then, composite slabs were installed as a surfacing work. Moreover, we watching project video on the boat and our boat came back to port and reached construction office. Then, we were explained about that project and we asked some questions to the interpreters. After studying about Port Bridge, our STG group and Dr. Wada came back to Tokyo by Shinkansen.





Photo 25, Superstructure of Mizushima Port Bridge



Photo 26, Me at construction of Mizushima Port Bridge





Photo 27, Mizushima Port Bridge Pier and Bridge Girder



Photo 28, Interpreters and our group on the boat

## 11. Sight Seeing

The last day of our STG visit was the sight-seeing in Tokyo. In the morning, we were picked up by Dr. Wada. We walked to the HATO bus station. Firstly, we visited to Tokyo Tower by HATO bus. Tokyo Tower, open in 1958, the height of tower is 333m self-supporting tower. The Tokyo Tower is taller than the 320m Eiffel Tower in Paris, making a major landmark in Japan. It weighs 4000 tons, much lighter than the Eiffel Tower, this is a strong, lightweight steel tower. Main observatory level is 150m and the special observatory level is 250m. We visited and looked the view of Tokyo at observatory levels and took photos and brought some presents for my friends in Myanmar. The view of Tokyo was amazing and trilling views. There had many high rise buildings which noticed me developed country, Japan. Tokyo is very clean and has many interesting places. Moreover, Japanese people are very friendly and obey the disciplines. Tokyo is the awesome city for me.



Photo 29, Me in front of Tokyo Tower

Then, we visited next places which were imperial palaces and Asakusa Temple. We looked imperial places on the bus and then we went to the Asakusa Temple by HATO bus. Asakusa Temple is the Buddhist Temple, so, I pleased for praying in Asakusa Temple and there have many shops to buy gifts and Japanese traditional cloths, Kimono for ladies. We got 30 minutes for shopping in Asakusa Temple areas. Then, we ate lunch at the hotel with Dr, Wada. In the noon, our STG visiting schedule was finished. Therefore, we had free time to visit other places. But, I came back to Presso Inn to rest. In the evening, I walked for shopping with Mr. Daisuke Fujii to the Tokyo Station. At night, I visited to Odiba with Mr. Jess



Anthony Alcid and Mr. Jay Silla. The night view of Rainbow Bridge and Odaiba Statue of Liberty are very beautiful places and pleased for my visiting. Then, we ate dinner at Odiba and come back to Hotel by train. Next day, I checked out from Hotel and then Mr. Kawakami picked up me and Mr. Jess Anthony Alcid to the Narita Airport by train.



Photo 30, At Asakusa Temple



Photo 31, At Asakusa Temple

## 12. Speech of Gratitude

First of all, I would like to express my gratitude to Japan Society of Civil Engineer for my STG visit and their effort in making all the necessary arrangements and accommodations. STG program gives young civil engineers from different countries to study latest technologies in Japan. My first trip to Japan was thrilling trip for me because I got good relationship between international students and I got many experiences in civil engineering profession. I really thankful Mr. Toru Kawakami and Dr. Wada for caring and explaining me about civil engineering during one week stay in Japan. I would like to express my gratitude all civil engineers and everyone who related from Public Work Research Institute, Kajima Technical Research Institute, Tokyo-Gaikan Expressway Construction Site TAJRI-Area Project, (TAISEI-TODA-DAIHO Joint Venture), Shinjuku Station Construction Project (Shinjuku construction supervisor's office), Coordinators at 17<sup>th</sup> International Summer Symposium and Young Engineer Workshop, Okayama University, Seto-Ohashi Bridges, Mizushima Port Bridge construction project (Yokogawa-Yokogawa Sumiki Birdge Joint Venture). Then, I would like to express my gratitude to U Win Khaing (President, Myanmar Engineering Society), U Myint Soe (CEO, Myanmar Engineering Society), all interviewers and U Than Tun Aung Chit (Chief Engineer) and all staffs from Aung Myin Thu Construction and Real Estate Development Co.,ltd who supported and helped for my STG trip to Japan. I was thanking to my family who deeply supported me everything in my life. I would like to say my thanksgiving to everyone who supported my STG visit.

Moreover, I will recommend to my juniors who will become good engineer in civil engineering profession. I have to make a STG trip presentation in Myanmar Engineering Society and I will share to all civil engineers in my present working company. After coming back from Japan, I have enthusiasm to work with Japanese construction companies and I want to study for Doctoral degree in Japan. Especially, I want to study in structural engineering and infrastructure. But, I need to prepare speaking skill not only English but also Japanese. Now, my studying starts for Japanese language in Myanmar. Someday, I hope to work with civil engineering related Japanese companies and to study in Japan. I will never forget my first trip to Japan with 2015 JSCE Study Tour Grant program for my life.