5th ASCENT

5th Asian Students Collaboration Encouragement Program in Technology

Collection of Final Reports

15 Mar. -23 Mar. 2014
in Tokyo, JAPAN



Acknowledgement

We have immense pleasure in successful completion of this program titled "5th Asian Students Collaboration Encouragement Program in Technology -5th ASCENT-".

The special thanks to the fundamental supports extended for the program, by Tokyo Tech Fund and Office.

A special note of thanks to Prof. Mr. Akinori Nishihara, a supervisor of SAGE, Prof. Mr. Yahiro Hirakawa, a consultant, Mr. Tsugihiro Shimura and Prof. Mr. Tom Hope, supporting advisors.

We also feel grateful to International Affairs Division of Tokyo Institute of Technology, Chulalongkorn University and Bandung Institute of Technology for supporting this program, as well as Mr. Ronaldo Geralldo from Philippine De La Salle Uni.

We greatly appreciate to all the cooperating organizations, companies and laboratories below (put in order of visit, lecture):

Companies / Institutes

National Institute for Environment Studies
Public Works Research Institute
Railway Technical Research Institute
Shibaura Water Reclamation Center, Bureau of Sewerage, Tokyo Metropolitan Government

Laboratories in Tokyo Tech

Hanaoka Lab., Department of International Development Engineering
Yasuoka Lab., Department of Electrical and Electronic Engineering
Hinode Lab., Department of International Development Engineering
Tanji Lab., Department of Bioengineering
Yai Lab., Department of Built Environment
Yoshikawa &Takahashi Lab., Department of Environmental Science and Technology
Tsuge Lab., Department of Innovative and Engineered Materials

Lecturers

Prof. Mr. Kunio Yoshikawa, Department of Environmental Science and Technology
Prof. Mr. Tom Hope, International Student Center

Index

ACKNOWLEDGEMENT **1**

INDEX **2**

ABSTRACT **3**

OUTCOME OF ACTIVITIES **7**

PRE-STUDY PRESENTATIONS 8
CULTURAL EXCHANGE 9
LECTURES 10
LABORATORIES 12
EXCHANGE PARTY 15
KAMAKURA SIGHTSEEING 16

OUTCOME OF MINI PROJECT **17**

NIES…NATIONAL INSTITUTE FOR ENVIRONMENTAL STUDIES 18
PWRI…PUBLIC WORKS RESEARCH INSTITUTE 20
SHIBAURA WATER RECLAMATION CENTER 22
RTRI…RAILWAY TECHNICAL RESEARCH INSTITUTE 24

OUTCOME OF MAIN PROJECT **27**

GREEN & SAFE CITY 28
ASEAN IN 2030-UTOPIA 34
BALANCED CITY 40
ECO SUSTAINABLE CITY CONCEPT 48

PERSONAL REPORTS **55**

TOKYO TECH STUDENTS 56
CU STUDENTS 58
ITB&UGM STUDENTS 63

PHOTO ALBUM **69**

APPENDIX **81**

SUMMARY OF QUESTIONNAIRES 82
SAGE STAFF'S COMMENTS 92

Abstract

1. What is ASCENT?

ASCENT stands for Asian Students Collaboration Encouragement Program in Technology, and is one of the international exchange programs in Asia. This program aims to establish further international networks among students in Asian countries by studying and discussing worldwide problems in recent years and leading edge technologies as considering Asian industry together. ASCENT is held in Japan about 10 days every March and contains company visiting, laboratory visiting in Tokyo Tech, special lecture, group discussion, presentation and more on the settled theme.

2. Motivation

ASCENT was first held in March 2010 by Student Association for Global Exchange (SAGE) in Tokyo Tech (Tokyo Institute of Technology), one of the top universities in the world, by the alumni of JAYSES (Japan-Asia Young Scientist and Engineer Study Visit) program which is organized by International Office of Tokyo Tech from 2007 and now the predecessor of Tokyo Tech-AYSEAS (Tokyo Tech-Asia Young Scientist and Engineer Advanced Study) program. Whereas Tokyo Tech students visit other Asian countries in JAYSES program, ASCENT welcome students from Asian countries to Japan and introduce Japanese technologies, researches and cultures, complementing the existing student networks. ASCENT aims to strengthen the connections more and to lead Asian development of economy and technology in the future.

3. Outline

Theme:	*Urbanization -Draw the future with your hands-*
Date:	March 14th (Fri) 2014 - March 23th (Sun) 2014
Place:	Ookayama campus, Tokyo Institute of Technology, Japan
Universities:	Tokyo Institute of Technology (Tokyo Tech / Japan)
	Chulalongkorn University (CU / Thailand)
	Bandung Institute of Technology (ITB / Indonesia)
	Gadjah Mada University (UGM / Indonesia)

4. Schedule

Date	Activities	Place
Mar. 14 (Fri.)	Welcome Party	Iidabashi
Mar. 15 (Sat.)	Opening Ceremony, Pre-study presentations, Cultural Exchange	Ookayama Campus
Mar. 16 (Sun.)	Lectures Discussion	Ookayama Campus
Mar. 17 (Mon.)	NIES (National Institute for Environmental Studies) PWRI (Public Works Research Institute)	
Mar. 18 (Tue.)	Shibaura Water Reclamation Center RTRI (Railway Technical Research Institute)	
Mar. 19 (Wed.)	Mini-presentations, Lab-visits, Discussion	Ookayama Campus
Mar. 20 (Thu.)	Lab-visits Discussion	Suzukakedai Campus
Mar. 21 (Fri.)	Final Presentations, Closing Ceremony, Exchange Party	Ookayama Campus
Mar. 22 (Sat.)	Kamakura Tour Farewell Party	Kamakura Yokohama

5. Lecturers, Institutes and Laboratories

Lecturers	Prof. Mr. Kunio Yoshikawa (Dept. of Environmental Science and Tech.) Associate Prof. Mr. Tom Hope (International Student Center)
Companies *In order of schedule	NIES (National Institute for Environmental Studies) PWRI (Public Works Research Institute) Shibaura Water Reclamation Center RTRI (Railway Technical Research Institute)
Laboratories *In order of schedule	Hanaoka Lab. (Dept. of International Development Eng.) Yasuoka Lab. (Dept. of Chemistry and Material Science) Hinode Lab. (Dept. of International development and Eng.) Tanji Lab. (Dept. of Bioscience and Biotechnology) Yai Lab. (*Dept. of Built Environment*) Yoshikawa&Takahashi Lab. (Dept. of Environmental Science and Tech.) Tsuge Lab. (Dept. of International Development and Eng.)

6. ASCENT committee

Student Association for Global Exchange
Email: sage.tokyo.tech@gmail.com
Website: http://www.siengp.titech.ac.jp/~sage/
Facebook Page: https://www.facebook.com/sage.titech
Twitter: @SAGE_TokyoTech

Consultant:

Prof. Mr. Yahiro Hirakawa
International Student Center

Supervisor:

Prof. Mr. Akinori Nishihara
Dept. of Human System Science, Graduate School of Decision Sciences

Advisors:

Mr. Tsugihiro Shimura
Business Operations Group, Fund Office, Public Relations and Outreach Division

Prof. Mr. Tom Hope
Dept. of Human System Science, Graduate School of Decision Sciences

Staffs (2013-2014):

Leo Hiramoto(Representative), Tomoki Ishimaru, Yuki Taoka, Chieri Yabu, Riho Yahagi, Fumika Yamaguchi, Soichiro Endo, Yukiho Kamta, Ryutaro Minematsu, Takuya Niioka, Nao Oikawa, Masayuki Ota and Li Xiuyang



7. Participants

University	Name	Nickname	semester
Tokyo Tech	Reo Azuma	Reo	B2
	Pipat Methavanitpong	Pipat	M3
	Minori Nakanouchi	Minori	B2
	Yuki Tsukamoto	Yuki	B4
CU	Pongsatorn Naksuth	Boat	B8
	Thanikarn Pattanavanichsakul	Tan	B8
	Santisuk Prapa-apirat	Peace	B7
	Tawit Sangveraphunsiri	Boom	B4
	Pattraporn Tantiwatana	Jaja	B3
	Nualphan Udompaiboonsuk	Palm	B5
	Visa Wangsuphachart	Nongnong	B6
ITB	Astryd Viandila Dahlan	Astryd	B7
	Imania Eka Diyanti	Imania	M3
	Aldia Faulinasari Karmaputeri	Aldia	B7
	Mochammad Dikra Prasetya	Dikra	B7
	Putranegara Riauwindu	Putra	B7
	Listianing Widiastuti	Listi	B5
UGM	Meilani Adriyati	Mei	B6

Outcome of Activities

5th ASCENT program contains not only discussion on the theme, but also other activities such as lectures, campus tour in Tokyo Tech, and exchange parties. Those activities could be the wonderful opportunities for participants to communicate each other, know our cultures, learn and get more interesting in something.

Activities		Writers
Pre-study Presentations		Yuki, Boat
Cultural Exchange		Nongnong, Mei, Pipat
Lectures	Prof. Yoshikawa	Dikra
	case study	Minori
	Associate Prof. Hope	Jaja
Laboratories	Hanaoka Lab.	Tan
	Yasuoka Lab.	Aldia
	Hinode Lab.	Peace
	Tanji Lab.	Putra
	Yai Lab.	Reo
	Yoshikawa&Takahashi Lab.	Palm
	Tsuge Lab.	Astryd
Exchange party		Imania
Kamakura Sightseeing		Listi, Boom

Pre-study Presentations



Yuki Tsukamoto (Yuki), Tokyo Tech

Japan

As for Pre-study Presentation, the main theme of Japan is Tokyo Olympic 2020. So we Japanese members researched what should we do about transportation and garbage if Tokyo Olympic is held now. When it comes to the presentation, I think we have some problems which we should improve. At first, we didn't have enough contents to introduce our university, Tokyo Institute Technology, especially the super computer TSUBAME. The second is we didn't have time to practice because of our bad management. Finally our presentation was too long to watch and listen to comfortably. We should learn from Prof. Tom Hope.

Indonesia

I think the slides of Indonesian Pre-study presentation were best. They used many good pictures efficiently to introduce information about Indonesia. It was also good they wrote as few words as possible on their slides and spoke a lot. Through their nice presentation, we members were able to know culture, food, and universities of Indonesia. But I think there was just one point to improve their presentation, there are too many slide (about 50) to finish within the time. However it was not big problem because of their high speaking skills.

Thailand

Actually I didn't know Thailand well, so the presentation was precious chance to know Thailand, one of countries which I want to go. Also students from Thailand were good at speaking English and a presentation and that helped me to know well. After the presentation, I heard from them that they had no time to practice together and spoke about some contents which had nothing to do with Pre-study (especially about gay!) . But I love such freedom friends…

Pongsatorn Naksuth (Boat), CU

I did impress with all group's presentation: Japan, Indonesia, and Thailand's group, each group had it own style and characteristic so I could learn a lot about their countries from the presentation: cultures, foods, and the problems, especially the transportation and waste management issues, in their countries.

What I have learned?

According to the presentation, all nations currently encounter both transportation and waste management problems. In term of transportation problem, both Thailand and Indonesia, for example, are now facing the problem from lacking of transportation systems in cities so people have to spend too much time on traveling in cities, and face severe traffic congestion within cities. To solve the problem both nations has imposed plans to expand the transportation system such as train, monorail. In addition, Bandung, Indonesia, the government has imposed many policies to reduce the problem apart from expanding its city's infrastructure. For instance, the Sunday morning car free, and 4 in 1 weekend passenger. Japan also have the transportation issues, even though, it is not really the same perspective like Thailand and Indonesia facing. Due to the large system of transportation in Tokyo—there have about ten firms which operate the transit system in the city, it is too complex for people to use the system, in particular foreigners.

Waste management problems are also the great issues in the countries: Japan, Indonesia, and Thailand. Obviously, Indonesia and Thailand have the same situation in this term, the countries are lacking of efficient waste management system, resulting in low quality of the system. However, this is because both countries have financial difficult to support or implement the advanced technologies to handle with problem. Unlike Indonesia and Thailand, the waste's problem in Japan is about how to increase the efficient of the current facilities to prepare for Olympic in 2020 hosted in Tokyo.

Cultural Exchange

Visa Wangsuphachart (Nongnong), CU



Cultural Exchange is one of the objectives of this ASCENT program because this program is included the students from three Asian countries; Thai, Indonesia and Japan. These three countries have different cultures and life styles. Fortunately, SAGE staffs had arranged lots of activities that gave us opportunities to exchange our cultures. For example, pre-study presentation that included the information about each countries, exchange party and etc. Moreover, we also shared room with two Indonesian girls.

I have learned so many things about Japan and Indonesia from this two weeks participating in ASCENT. For Japan, I always love to know about Japanese cultures and traditions but for this time I got to know and work with Japanese people which I haven't done before apart from just sightseeing in Japan. I found that Japanese people are so punctual and dedicating. They are also hard working and inspiring. I was also fascinated by Japanese toys (Kendama) which seemed like easy to play but in fact really hard and need lots of practice. For Indonesia, after I have acquainted with the Indonesian students. I would say they were so intelligent and great-English speakers. They had great sense of humor and fun to work with.

Overall, I am so happy and blessed to get to know all of the students from different countries. One day, I hope to come back and visit Japan again. Also I wish to travel to Bandung, Indonesia where I have never been before. It would be so nice to meet all the people from ASCENT again and set up a reunion party. Moreover, if any of the students plan to visit Thailand, all the Thai students are ready to be your guides and show you around.☺

Meilani Adriyati (Mei), UGM

In the Program 5th ASCENT 2014, part of Cultural Exchange that was amazing and very happy fun, and I could see the participants of Japanese dance very unique and games very difficult for me, this is a new thing in my life, other than i was surprised by the same games with the Thailand child games and Indonesian child games to , but in my opinion this is very unique and very encouraging . Indonesia showing the game commonly played by young children and his trademark dance, not very typical but very popular and only owned by Indonesia, we call "dangdut", this probably is not the first time for me being a leader in dance, but there are unique in this program I was able to invite the audience to dance together, very amazing and never forgotten.

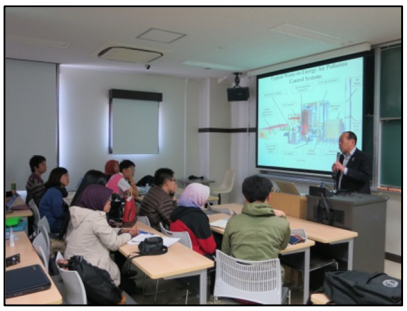
Pipat Methavanitpong (Pipat), Tokyo Tech

On the 1st day in ASCENT, participating students from Japan, Thailand and Indonesia introduced their own countries and performed their traditional plays. Indonesian has many local tribes e.g. Sudanese and Javanese, it is known to have beautiful beaches to go and relax by the sand or dive into the sea. There are many theories about Thai people's ancestors of where they came from. Thailand is known for beautiful Buddhist temples. Must-go spots in Tokyo are covered by JR Yamanote line. It runs in circle, and each stop has its own uniqueness. Travelers can enjoy travelling and shopping in the city by this single train route. All students joined playing with other countries' plays, dances and toys; for example, "Long-long-naga" from Indonesia is forming a snake and a gate, and the snake tries not to be captured by the gate, "Ngoo-gin-harng" from Thailand is a mother snake protecting her following children from a father snake. "Ken-dama" from Japan is standing a string-tied ball on a hammer.

Lectures

Prof. Yoshikawa's Lecture

Mochammad Dikra Prasetya (Dikra), ITB



Waste problems on developing countries mostly caused by some similar reasons: local people behavior, large amount of waste (not sustainable), or because of the wastes are not separated by each category. Despite the problems Prof. Yoshikawa's lecture enlightens us that we could view these waste problems as a big potential to solve another problem: energy problems. Most of wastes are unutilized resource, we can utilize it into a waste transfer energy business. Some of the waste transfer energy technologies that he introduced to us are Hydrothermal (Waste-to-Coal), Pyrolysis (Waste-to-Oil), and Gasification (Waste-to-Electricity). These technologies are very potential and have started to be implemented in Japan, which have shown good outcome. After Prof. Yoshikawa gave his lecture, he introduced us to two of his students, one from Thai and one from Indonesia, to give us a presentation about their research and also their experience studying in Japan.

Following these lectures I felt inspired that we should do something about our environment and make things better. All of the technologies that have been presented to us are seems implementable in our countries, but sure need strong commitment to make it effective and sustainable. I also found that studying in Japan could be a really great experience to have. The researches and facilities are great, and there will be people from your lab and international student associations that will accompany you along your study. It is really interesting to know these trivial information, especially from your own fellow university alumnus.

Lecture and Case Study

Minori Nakanouchi (Minori), Tokyo Tech



Lecture by Tomoki is about Japanese current transportation. Transportation system in Japan is so advanced that we can use all lines by one IC card and so punctual that trains arrive exactly on time. Even though I am Japanese, I was surprised that almost all of the parts in Tokyo are within 10 minutes' walk of each station. However there are some disadvantages such a too complicated railways and crowds in rush hour.

After the lecture, we discussed advantage and disadvantage of each transportation; car, railway and pedestrian. I discussed the problem of train, and concluded we had to pursue improvement of safety from earthquake. Anyway, this project helped me classify features of transportation.

Associate Prof. Hope

Pattraporn Tantiwatana (Jaja), CU



1. Learner Prep

Preparing the learner for the learning experience has been shown in study after study to enhance learning readiness. By exposing learners to the material prior to the learning event, assimilation, thinking and recall time are all dramatically increased.

2. Posture and Movement

On average, standing increases heartbeats by 10 extra times per minute. That sends more blood to the brain, which actives the central nervous system to increase neural firing. When learners find their energy level dropping, get them to stand up for 2 - 3 minutes as an energizer.

3. Repetition

We learn through repetition. Habits, beliefs, values and self-image have been learned through repetition. Skillful presenters use the technique of repeating key points throughout their presentation. Naturally, a skillful presenter looks for creative ways to revisit the same point - simply saying the same thing over and over again can be frustrating for audience members.

4. Questioning Techniques

Your audience will remember less than 30 percent of the sentences they hear during your presentation. But they will remember more than 85 percent of the questions you ask. By asking questions, you deepen audience understanding and conviction. The best questions are ones that get your audience thinking, shock them to attention or get their agreement.

Rhetorical questions work as well as questions that require a response. Simply by turning your audience members' brains from passive to active you are encouraging engagement in your presentation.

5. Be Brief and Finish Early

Our fast-food, TV, information society has set new standards for all presenters - we must be concise and brief. People were once willing to listen to a speaker for an hour. Today, even the clergy has to limit its messages to about 20 minutes or less. Interviews on talk shows ran 15 minutes at one time. Now they rarely last more than 7 minutes. TV interviewers used to allow a guest the luxury of a one-minute response. Today that has diminished to less than 25 seconds.

How many presentations have you attended that finished early? Compliment your audience by finishing five minutes early. Be aware of time management from the very beginning of your presentation. Plan how long each stage of your talk should take and stick to it.

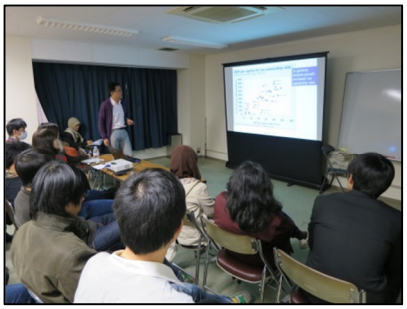
Last but not least, don't forget to add as much much photos and LESS TEXT is the best!

Laboratories

Hanaoka Lab.

Thanikarn Pattanavanichsakul (Tan), CU

What I have learned?



Associate Prof. Dr. Hanaoka Shinya talked about transport engineering and comparative study about transportation in Thailand and Indonesia. I have learned about Sustainable Transport for East Asian Mega Cities (STREAM), which related to urbanized density. In a high-density city, public transportation is efficient, so less people prefer to travel by their private cars. Additionally, an Indonesian student studying this field gave me a lecture about Bus Rapid Transit (BRT) called TransJakarta, a bus system with special lane, which can solve a problem of traffic congestion in Jakarta, Indonesia. However, BRT in Jakarta is not proficient because of facing some problem, therefore, continuous efforts to improve TransJakarta service level is needed, which this process is called Mode Shift. Moreover, they studied about four-stage transport model that can make the better BRT system.

What do I think about this laboratory?

From where I stand, I have learned a lot of informative information from this laboratory. All studies are very useful to improve public transportation in many countries because they have already done many means and applied them in practical implementations. I really appreciate this laboratory because they presented an interesting information and gave examples from Thailand and Indonesia, both being countries of participants. Thus, it was easy to understand what they wanted to show us. Also, traffic jam is still a main problem in both countries, so it was a good chance to study about solutions, even though some of them are in the process.

Yasuoka Lab.

Aldia Faulinasari Karmaputeri (Aldia), ITB

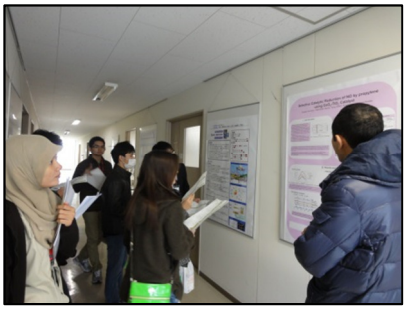


In this laboratory, participants from Group A were explained about some researches done in the lab. The researches were mainly about investigation of fundamental reaction processes and practical applications of plasmas in water. Because of environmental pollution and water shortage problem, there is a strong demand for studying advanced water reuse and recycling. They try to recognize social demands and conduct experiments related to practical applications to solve the water problems.

One of the researches is about atmospheric air plasma. In this experiment, E. coli in running water is continuously sterilized by plasma. The plasma is generated inside the bubbles in the solution. The discharge gas is injected and forms gas bubbles in water. Applying a strong electric field inside the bubbles generates plasma on gas–liquid interface. Reactive species and high-energy species generated by the plasma can fully decompose harmful substances in water, such as humic acid, dioxin-like compounds, and especially PFOS (Perfluorooctane sulfonic acid) that is toxic and persistent. This plasma-used water treatment method is more effective in reducing substances like PCB and dioxine that can't be decomposed by ozone, and especially in reducing perfluoro compounds that even advanced oxidation process can't reduce them.

Hinode Lab.

Santisuk Prapa-apirat (Peace), CU



5th ASCENT's theme is "Urbanization" which strongly relates to civil engineering and environmental engineering. However, my background is in Information and Communication Engineering which deals with information systems and computers. At first, I did not know how much I can understand from this laboratory since it was focused on inventing and researching to about how to improve the environment and waste systems.

The Hinode lab is working towards preserving the environment with new technology in these two ways – developing materials for environmental purification and finding effective ways to utilize waste resources. The lab showed us methods and chemicals that are used to purify the air and water. Although it was difficult understanding the technical terms and concepts from this lab, what I gained was to care more about the environment and realize that there are ways to fix it. Good systems and advanced technology can help us regain the waste-filled environment.

Compare to Japan, Thailand does not have a good enough system or technology to manage the waste and preserve the environment as much as we should. In the future I expect Thailand to adapt Japanese research into use for our country. Since Thailand is not a country with much funds allocated to research, it would be better to use resources from other countries like Europe, Americas, and Asian countries like Japan.

Tanji Lab.

Putranegara Riauwindu (Putra), ITB



Tanji laboratory is one of the laboratory in Tokyo Institute of Technology under department of Bioscience and Biotechnology that mainly cover the research on utilization of microbes, either bacteria or virus, to solve the humanity problem especially urbanization problem.

During our visit to Tanji laboratory, we were introduced several of its research topics. One of the topics was the utilization of Bacteriophage that serves as the bio-controller for the other microbes that could cause disease to domesticated animal. This topic was being conducted because the usage of antibiotics effectiveness to serve as bio-controller for other microbes is often reduced due to the capability of the target animals to produce antibiotics resistant antibody.

Other topic that was being introduced to us was the utilization of bacteria to reduce the sulphur production in a crude oil well. The bacteria used are targeted to aim at the sulphur producing bacteria that live within the crude oil well piping. This research becomes so important because the presence of large number of sulphur can deteriorate the internal exterior of the oil piping thus lead to the failure of the entire system.

Yai Lab.

Reo Azuma (Reo), Tokyo Tech



We visited Yai Laboratory in Tokyo tech Suzukakedai campus and see outlines of their researches. Their lab has some research of traffic problems and we could see 2 researches, Air traffic control and Moving Virtual Cockpit Simulation system.

1. Air traffic control

They research air traffic control especially the technology of decreasing airplane noise, because Japanese major airport Haneda and Narita have the demand of domestic air traffic and airplanes make big noise in daytime. So they find the way to decrease the noise from the viewpoint from engine, air route and so on.

2. Moving Virtual Cockpit Simulation system.

When we make the road, we don't know that it is enough width for people driving car, bicycle, and walker or not. So they make the driver simulator. It can change the rode width, number of walker and so on. They can experience how do people feel when drive by using this simulator.

Yoshikawa&Takahashi Lab.

Nualphan Udompaiboonsuk (Palm), CU



This lab is extended from the idea that unutilized solid resources such as waste, biomass and coal, or other natural resources that can be converted to high quality energy by combining several of technologies. The three main technologies which this research focuses on are solid fuel production technologies, liquid fuel production technologies and gasification.

First, solid fuel production technologies called hydrothermal treatment is the procedure which uses heat and water to change unutilized resources into dry product, used as solid fuel. The current research can be divided into two main groups, fuel group and fertilizer group. The relevant different between fuel group and fertilizer is that fuel group use coal-like as raw material ,fertilizer use biomass instead.

Second, liquid fuel production technologies, since the number of plastic wastes are increasing significantly and landfilling cannot solve this problem well. Therefore, this research provides the solution for waste plastics by proposing a sequential pyrolysis and catalytic reforming system.

Finally, gasification process, the process converts carbonaceous materials into a valuable syngas. Most of the gasify agents are air and stream at the high temperature. The product from gasification method, syngas, it can be used as a feedstock in some chemical process.

This research is ongoing, and there are many advantages come from this research not only save energy for entire world but also improve the ability in humanity

Tsuge Lab.

Astryd Viandila Dahlan (Astryd), ITB



Every day people generated plastic waste around thousand tons waste. Plastic waste is the most waste generated not only in developing country but also in developed country. Plastic that is often used is very difficult to be decomposed so it resulting in the accumulation of plastic waste in the ground and in the water. Plastic waste will accumulate in aquatic (marine). It can harm the aquatic animals because of plastic similar to jellyfish or aquatic animal's food. There have been many cases of the discovery of plastic in the aquatic animal's body.

Plastic is common in society are made from fossil and difficult degraded. Therefore, the scientists make or create plastic that can be degraded naturally by bacteria in soil and in water, it's called biodegradable plastic. Nowadays, has been highly developed biodegradable plastic but the plastic is still derived from fossil. From the lab visit, it is known that there are biodegradable plastics made from biomass. Plastic with biomass sources are environmental friendly due to the carbon cycle in it.

Research on biodegradable plastics with biomass sources are already being developed, proven by presence of the product has been produced from the plastic. Biomass sources used were PHA (Polyhydroxyalkanoate). However, this type of plastic make white colour of plastic so it is necessary in order to study the resulting colored transparent plastic. Genetic engineering required to make the plastic becomes transparent and it needed more research on it.

Exchange Party

Imania Eka Diyanti (Imania), ITB



The exchange party held at Ookayama Campus on March 21st 2014 was surely some super-fun! Everybody was having (too) good time (haha)—some people do whatever-dance, some listen to the their shared-interest-music, some take photos, some talk and laugh together (or even tease each-other, haha), even we had fun with Mr. Professor, too. ☺

Participants were also given the opportunity to meet other Japanese students from Tokyo Tech University and Tokyo University, to talk and to share about our lives, cultures, studies (well, practically everything, even just little chit-chats and laughters ☺)—while having seriously delicate stuffs to eat and drink, too, of course. Hahaha. My favourite (even it had becoming Indonesian students') is Calpis! Teehee.

Thanks to the committee for kindly inserting this agenda in our dense schedule, so that the participants could have an extended opportunity to taste such a splendid party after the stress we endured at preparing and presenting final presentation (yes, I am giving a bit exaggeration to this part, haha). In this chance, I made friends with Shinnosuke and Keitaro from Titech, also Miku and Mai from Tokyo University. They were all so open-minded and hospitable. Glad that I could find them later on Facebook so we're still keep in contact.☺

Okay. Last but not least, please pardon my too-much-smileys, haha, because the exchange party was waaaayyyy too enjoyable, indeed! It was my first exchange party also (I guess, for an official one) so I was really glad I could take part in here! Thanks again, ASCENT!

Kamakura Sightseeing



Listianing Widiastuti (Listi), ITB

The weather on that day was warm and sunny. We were very glad to have such a nice weather because it had been so freezing cold the last few days. According to the schedule, we were getting ready from our hostel at 9.00 AM and we went to our usual path for a train ride. It took approximately one hour to get to Kamakura. Soon as we got off our train at Kamakura Station, the first place we visited is restaurant to fill our barely empty stomach for lunch. The restaurant to which we visited has a very traditional nuance and homey feeling to it.

Our next two destination places are Kamakura's main shrine where you can find the great size of Buddha statue and the second one is Hasedera temple which has such a magnificent sea view from above. We've all enjoyed the cultural exchange about the ritual we should be doing at the shrine entrance and also our little walk to reach both destinations as we could see various cute little shops which sell souvenirs, foods and Japanese traditional confectionaries. After visiting the cultural heritage in Kamakura, we were heading to Komachi Street which is famous for shopping arena of Kamakura's souvenirs. We ended the day by having farewell party in one of the restaurant in Yokohama. We just had blast during the party, but sadly at the end of the day we all had to say goodbye to each other because, it was indeed our last day altogether in the 5th ASCENT program.

Tawit Sangveraphunsiri (Boom), CU

That was my last day in Japan. I was very excited to sightsee in Kamakura, the cultural-calmly city. Kamakura is located in Kanagawa prefecture, southern of Tokyo Metropolitan. I was amazed, even though I suspected it was not my first time to be here because of the familiar scenery. I recall there were crowded due to the weekend.

After we had lunch in the local restaurant around Hase station, we walked along the street to landmark of Kamakura, the Great Buddha temple. I have realized lots of Thais here because of their style and conversation. Everyone looked impressive. We have exchanged our difference for paying respect to each other's sanctity. Great Buddha (Daibutsu) is very respectable. We could go into the statue but we did not enter because of time limitation. Then, we went to Hasedera temple. This temple is located on mountain. Several trees were blooming beautifully. I imagined when all flowers would spread out, it would be extremely wonderful. Nearby the Kannon-do Hall is observation desk, we mounted the stairs to there. Around scenery is the Hase city's landscape and the ocean, I have smelled soft oceanic scent from the Pacific Ocean also. Unfortunately, there was not any blooming hydrangeas. I hoped to see when all the flowers had bloomed, it would be very unforgettable memory for sure.

Last of the day, we went back to Yokohama station and joined farewell party at "Alibaba restaurant". We made lots of memory there. I have realized whatever happened within 10 days, which was a good experience. Although this was last day of program, we would meet each other again in the future certainly. Our friendship will last forever.

Outcome of Mini Project

In 5th ASCENT, participants visited companies/institutes related to "Urbanization". Participants gathered information regarding those companies/institutes, and made reports and short presentation in groups. This session aims to establish skills of gathering, summarizing and delivering the information.

Companies/Institute	Group	Writers
NIES National Institute for Environmental Studies	A	Boom (CU), Tan(CU), Aldia(ITB), Dikra(ITB)
PWRI Public Works Research Institute	B	Reo(Tokyo Tech) Peace(CU), Nongnong(CU) Astryd(ITB),
Shibaura Water Reclamation Center	C	Pipat(Tokyo Tech), Yuki(Tokyo Tech), Jaja(CU), Listi(ITB), Mei(UGM)
RTRI Railway Technical Research Institute	D	Minori(Tokyo Tech) Boat(CU), Palm(CU), Imania(ITB), Putra(ITB)

NIES...National Institute for Environmental Studies

GROUP A

Boom (CU), Tan(CU), Aldia(ITB), Dikra(ITB)

Introduction

National Institute for Environmental Studies (NIES) is the research institute which bases on healthy environment for the nations such as waste management and climate changing. NIES was founded in March, 1974 and is located in Tsukuba city which is planned to be the science city of Japan. This institute deals with 8 research centers. For this time when we visited NIES, we focused on Center for Material Cycles and Waste Management Research.

That was a good chance for us, Thai and Indonesian student, to learn how Japanese treat and eliminate waste effectively. In our country, the waste problem is the one of major problem that make their population unhealthy and poor environment.

After we had arrived at the institute, we were lectured some background and obligation from Dr. FUJITA Tsuyoshi. We have gotten a chance to observe some laboratories, i.e. center for material cycles and waste management and landfill simulation experiment.

Center for Material Cycles and Waste Management Research

For this center, researchers access materials both as potential resources and for their toxic properties. Moreover, they develop techniques and implement research which related to resource cycles and the appropriate disposal of waste and sewage. These can lead to practical applications resulting in environmental recovery.

Researches

We were given a chance to see some of the researches that were being conducted in NIES. The first one was an incinerator experiment. They are experimenting on brominated flame retarded in the emission gas that is coming from plastic waste. Improvements are needed for future industries. The second research was a landfill simulator. They are doing a simulation of a small-scale landfill to observe the changes and behaviors. The wastes that they are using for experiments are Asian waste samples, which mostly are non-organics. Organics wastes such as food waste are already prohibited by the government and being used for bio-gas, therefore they put their focus on non-organics wastes.

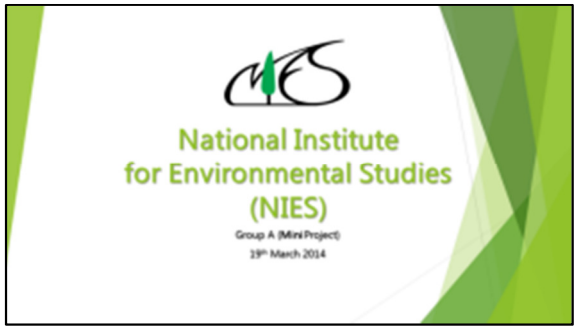
Conclusion

To adapt such technologies like that are being developed by NIES, to any developing countries such as Indonesia and Thailand, there are some factors to be considered:

1. The waste has to be separated at the source, so it can be managed and treated based on its characteristics and it is clearly more efficient and effective.

2. To adapt such technologies, the feasibility condition of the developing countries also has to be considered, such as financing, society, and environment.

3. The other key points are change mindset of the society to be more concerned about the environment and change some policies as the force so that the waste management system can be improved.


National Institute
for Environmental Studies
(NIES)
Group A (Mini Project)
19th March 2014


Thailand & Indonesia :
What's Problem?
Incinerator is againsted publicly.
Not enough landfill
Bad management
Budget is scanty.


Japan :
What's Difference from us?
A lot of incinerators
Waste sorting
Very good management


Why are they different?


Center for Material Cycles and Waste Management
Potential resources
Resource cycles
Appropiate disposal of waste and sewage


Incinerator


Landfill Simulation Experiment
For Assessing:
Landfill Condition
Safety and Stabilization
Developing Technologies and Systems for Landfills


Conclusion
Achievement in waste management
Improve our management system
Change mind set & Policy
Adapt the technology appropriately


Thank you
for your kind attention



PWRI...Public Works Research Institute

GROUP B

Peace(CU), Reo(Tokyo Tech), Astryd(ITB), Nongnong(CU)

Public Works Research Institute (PWRI)

The Incorporated Administrative Agency Public Works Research Institute (PWRI) was founded to improve civil engineering technology by conducting research and development on civil engineering techniques, providing technical guidance, disseminating research result, etc., and to contribute to society by improving infrastructure.

Pavement Research

We visited Pavement Research Teams facility.We could see the material of the road and automatic driving system. First is the road of material research about drainage on the road they make some sample using several materials and try to reduce cost, CO_2, stress and so on .Next is automatic driving system. There are 2 road, big and small. The car driving automatic, running this road and you can run so far distance you in short time than usual. Automatic driving system use 3 GPS satellite and gyro and so on. and can know the condition of car wheel axle.

Wheel Running Machine (WRM)

The Wheel running machine is used to test the pavement material. The structure contains a large wheel that puts constant pressure on the material being tested. Since road pavement materials take very long to crack or break, only one piece of material can be tested within a day. When the machine is operating, the large rollers would roll from one end of the machine to the other. Below this machine, there are marks that signifies the previous cracks from the previous tests.

30 MN Universal Testing Machines

The 30 MN Universal Testing Machine is a machine used to test the strength of the part of bridges. The structure of the machine is very tall like a tower. Parts of the bridges are tested in the center of the machine. On our visit, this machine was not operating.

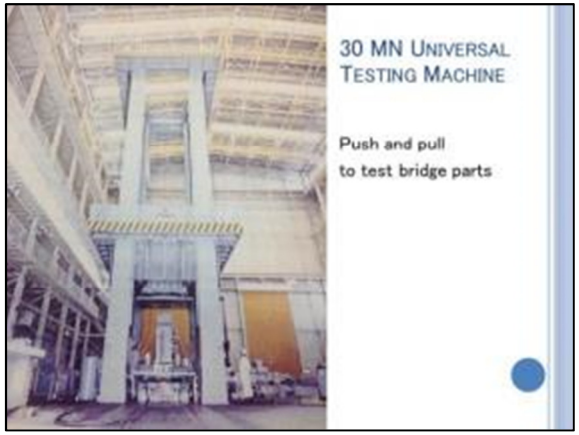
Decommissioned Bridge

One of facilities in PWRI is storage facilities of decommissioned bridge members for clinical study. PWRI conduct investigations on bridge that have been damaged. The damaged can be caused by corrosion, salt damage, fracture of steel members and longitudinal cracks. From this investigation, they can provide information and improve the quality of the bridge to be made.


PWRI
PUBLIC WORK RESEARCH INSTITUTE
Peace
Nongnong
Reo
Astryd


PAVEMENT
Research on stronger pavement
Durability test with car


WHEEL RUNNING MACHINE
One day to test one piece of material
Big machine


30 MN UNIVERSAL TESTING MACHINE
Push and pull
to test bridge parts


BRIDGE PARTS
Research on failure of bridge from old bridge parts


THANK YOU!

Shibaura Water Reclamation Center

GROUP C

Pipat(Tokyo Tech), Yuki(Tokyo Tech), Listi(ITB), Jaja(CU), Mei(UGM)

Shibaura water reclamation center is the 3rd oldest facility. It has operated since 1931. It handles wastewater from inner Tokyo region. It can recover water up to 850,000 m3/day.

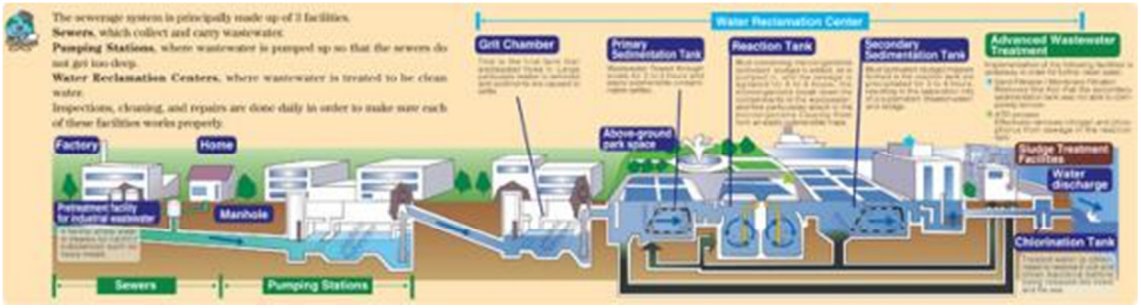


Figure 1: Shibaura plant's water recovery process

Wastewater is produced by households and industries. Wastewater from both sources is not separated and goes to same sewers. The plant accepts it into its tank. Large matters such as papers, sludge, etc. are removed here. The wastewater is then pumped to the primary sedimentation tank and flows slowly for 2-3 hours to settle submersible contaminations. Next, it goes to reaction tanks and stay for 6-8 hours. These tanks are filled with microorganisms which eat leftover contaminants. After that, it is chlorinated to remove E. coli and other bacteria. Wastewater is recovered and is ready to be released to rivers and sea.

Recovered water from the previous process can be treated further to produce tap water. The recovered water go into biological filter and ceramic membrane filter. The ceramic membrane (Fig. 2) is a very fine passive filter device with high durability and easy to maintenance. After its 15 years of its service lifetime, it can be recycled to other ceramic products.



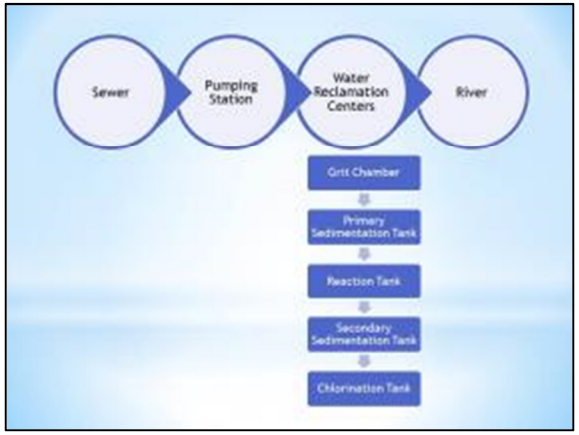
Figure 2: Ceramic Membrane Filter

Sources:

1. http://www.gesui.metro.tokyo.jp/english/center/center01.htm

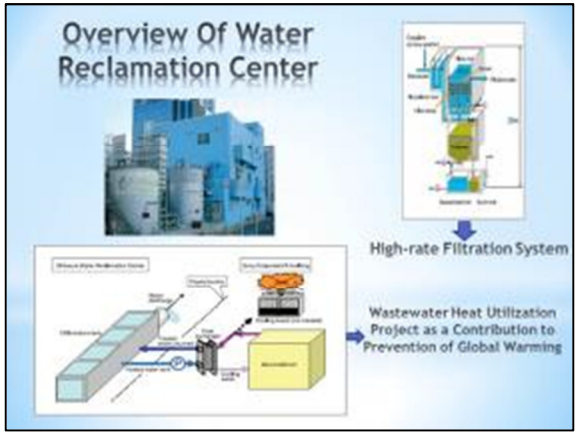
2. https://www.metawater.co.jp/eng/product/drinking/membrane_clarify/index.html

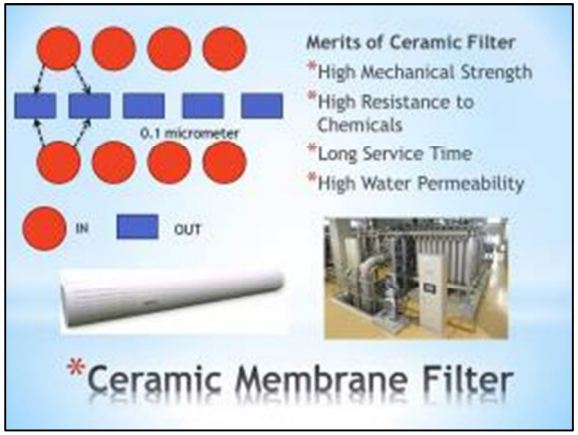

Shibaura Water
Reclamatiom Center
5th Ascent 2014 , Tokyo,JAPAN


Sewer
Pumping Station
Water Reclamation Centers
River
Grit Chamber
Primary Sedimentation Tank
Reaction Tank
Secondary Sedimentation Tank
Chlorination Tank


How to Collect Seweage?
*Separete
...or
*Combine


*Microorganism


Overview Of Water Reclamation Center
High-rate Filtration System
Wastewater Heat Utilization Project as a Contribution to Prevention of Global Warming


Merits of Ceramic Filter
*High Mechanical Strength
*High Resistance to Chemicals
*Long Service Time
*High Water Permeability
0.1 micrometer
IN
OUT
*Ceramic Membrane Filter

Railway Technical Research Institute

RTRI...Railway Technical Research Institute

GROUP D

Putra(ITB), Boat(CU), Imania(ITB), Palm(CU), Minori(Tokyo Tech)

Introduction

RTRI aims at contributing to the development of railway technologies around the world through Introduction of its R&D results to other countries and carrying out joint researches with overseas research organizations. RTRI works on 4 fundamental policies which are improvement of safety, harmony with the environment, cost reduction and improvement of convenience to enhance the railway transportation system not only in Japan but also entire world. The importance of the RTRI research is actually to elevate the safety and convenience level of railway transportation system as well as reducing the energy and cost needed to operate the railway transportation system.

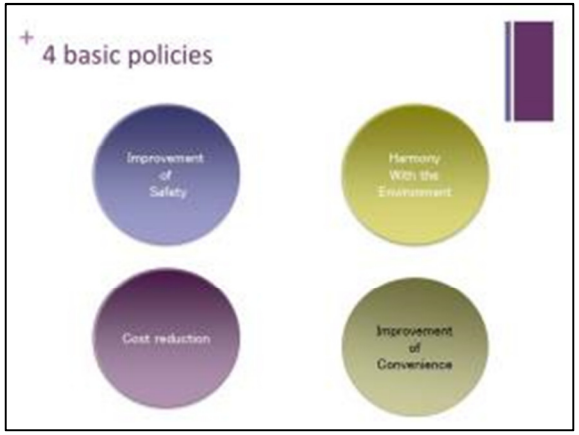
Research Coverage

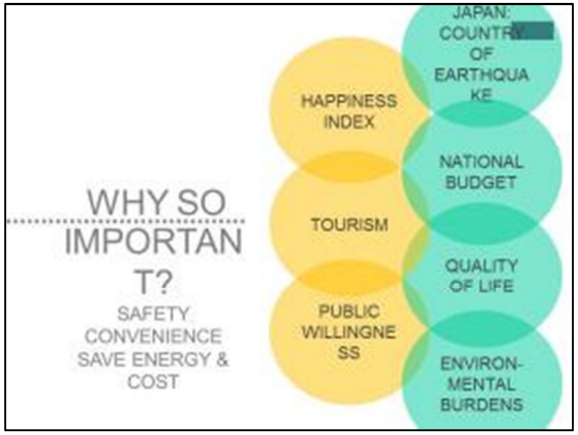
In order to meet the above mentioned objectives, RTRI conducted several activities to accomplish their goal, which are: observation, research, modelling, testing, and application. RTRI implements those activities in several topics that cover : Vehicle Structures, Vehicle Control, Structures, Power Supply, Track, Disaster Prevention, Signaling and Transport Information, Materials, Railway Dynamics, Environmental Engineering, Human Science, and Maglev System. Each of the RTRI activities serve as a tool to achieve their goal and is conducted in series or parallel. Observation means that RTRI observe the ongoing system to evaluate whether the current system is already in their optimum condition or not. Research implies that RTRI conduct research to improve the current system to make it more safe and convenient based on the observation data. Modelling means that RTRI create a model or prototype to test the research result in order to improve the current system. Testing is another activitiy that RTRI does in order to test the model or prototype using the latest testing technology. After the prototype or model have been tested, RTRI is ready to apply the prototype to the current system in order to improve the quality of the railway transportation.

Impression

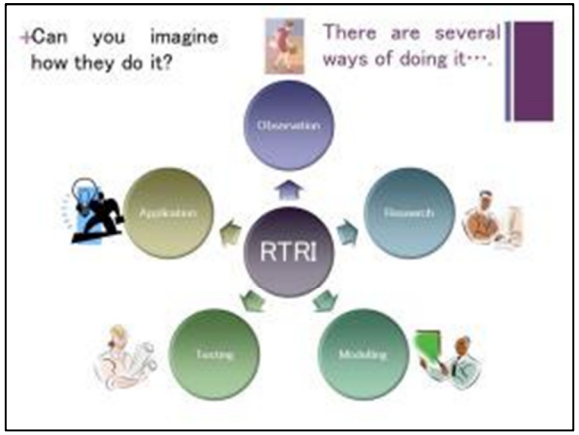
Our Impression During we visited RTIR; we found lots of interesting things: the train models, the simulation system, and safety helmet. Firstly, there is no better place to see prototype of the trains than this institute. During the visit, we saw lot of interesting prototype such as maglev trains from the beginning of its development to the most recent model. It was such an impressive that we have an opportunity to see these technologies. Secondly, the simulation systems which help researchers to simulate an event caused by many sources like earthquake. It helps us to imagine the real situation so we can find ways to improve the system.


RAILWAY TECHNICAL RESEARCH INSTITUTE

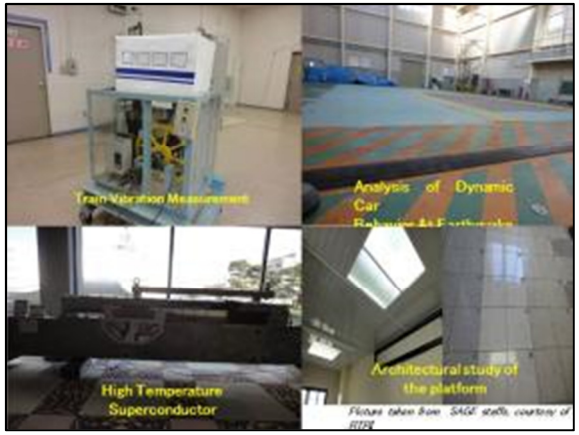

4 basic policies
Improvement of Safety
Harmony With the Environment
Cost reduction
Improvement of Convenience


WHY SO IMPORTANT?
SAFETY
CONVENIENCE
SAVE ENERGY & COST
HAPPINESS INDEX
TOURISM
PUBLIC WILLINGNESS
JAPAN: COUNTRY OF EARTHQUAKE
NATIONAL BUDGET
QUALITY OF LIFE
ENVIRON-MENTAL BURDENS


How They`ve Done It?


Can you imagine how they do it?
There are several ways of doing it….
Observation
Application
Research
RTRI
Testing
Modeling


This is their daily basis activities..
Vehicle Structure
Vehicle Control
Structures
Power Supply
Track
Disaster Prevention
Signalling and Transport Information
Materials
Railway Dynamics
Environmental Enginering
Human Science
Maglev System


Train Vibration Measurement
Analysis of Dynamic Car
High Temperature Superconductor
Architectural study of the platform


Impression
Models
Simulation system
Safety helmet


THANK YOU! ARIGATOU!

Outcome of Main Project

The final goal of ASCENT program is to suggest our ideas/solutions to the problems related to the theme as students who would play a crucial role in the coming future in Asian community. Each group chose their topics and summarized their ideas in reports and presentations, which is held at the end of the program.

Topic/Title	Group	Writers
GREEN & SAFE CITY	い	Yuki(Tokyo Tech), Boom(CU), Nongnong(CU), Imania(ITB)
ASEAN in 2030	ろ	Boat(CU), Jaja(CU), Astryd(ITB), Mei(UGM)
Balanced City	は	Minori(Tokyo Tech), Peace(CU), Tan(CU), Dikra(IBT), Listi(ITB)
Eco Sustainable City Concept	に	Pipat(Tokyo Tech), Reo(Tokyo Tech), Palm(CU), Putra(ITB), Aldia(ITB)



GREEN & SAFE CITY

Group ๖

Boom(CU), Nongnong(CU)

Imania(ITB), Yuki(Tokyo Tech)

Why is "Green and Safe City"?

"Green" and "Safe" being widely concerned to be the one of the important factor for an ideal city. The reason is this theme could improve of life for population. After this development had been accomplished, it could help everyone with making more convenient life. We could reach our goal later, "Happy life". So we divided the theme of our ideal city into 2 covering approaches, "Waste management" and "Transportation".

Waste management

When we think about management of waste system, we should identify two kinds of waste, solid waste and wastewater. In this part, I explain two concerns of our theme (Green and Safe) from the views of two kinds of waste. First is about Green concern especially for public place. For solid waste, we think there are three important ways for waste management, to encourage 3R, make clean public place (business men relaxing and children learning how to separate waste) and promote good government practices (especially social campaign and incentive scheme). And for wastewater, the two points are essential that to clean river and ocean for sports like fishing or sailing, reclaim wastewater like fountain flush in public place. Second is about safety concern especially for public health. For solid waste, we think to prevent not only leachate contamination but air pollution from waste burning because we have to need not only groundwater to drink but incinerator with high temperature. And for wastewater, there are also two essential points to prevent. We think these two factors are flooding and water-borne diseases.

Waste treatment

Waste treatment is the end-phase of waste handling, just before final disposal for the last residue (such as ashes from incineration). Municipal waste treatment for our city is divided into two main parts as well, those are solid waste treatment and wastewater treatment. Each part will be explained below.

1. **Solid Waste Treatment**

   Several things highlighted in the technical aspect of our solid waste treatment process are:

   - Emphasizing the sustainable concept through formation of eco-friendly materials, i.e. formation of biodegradable plastic from treating biomass using specific strain of bacteria.
   - Encouraging the extended utilization of thermal technology, since these thermal processes have high efficiency percentage in reducing the waste volume. The application can be varied from gasification, incineration, or pyrolysis process (in accordance to the technical needs and budgets available).
   - Increasing the percentage of material recovery, particularly those high-value materials that are used in significant amount by people (paper, goods package, metal from electronics, etc.)

2. **Wastewater Treatment**

   Three main intensification matters of our wastewater treatment are:

- Enforcing the implementation of biological system in wastewater treatment plant (WWTP). Biological technology employing bacteria/microorganism is renowned for its affordability and reliability in degrading organic matters of the wastewater.
- Utilizing membrane technology in water reclamation plant to fulfill the safety standard of water reuse application. Membranes have high efficiency of suspended matters removal and also can set aside advanced constituents in water, such as TDS (total dissolved solids) and pathogens (bacteria and/or virus, depends on the membrane variant).
- Applying ozone for more reliable and faster process, since this gas is notoriously reactive than ordinary oxygen, so it can further reduce the retention time needed for wastewater treatment process by significant amount.

Transportation

In transportation aspect, our city has 2 major goals.

The first goal is "to encourage public transportation system". Our public transportation consists of two systems, main system and supporting system. The main system mainly concerns about planning and implement Train and subway with RTRI's studies. To be specific, we want our train system to cover most part of the city, has enough capacity for the growing population and be able to integrate all the systems for the convenient usage. This policy will ever be better by applying the supporting system which is buses. We want our people to be able to access all the area apart from the train station by using buses. We will also provide a common ticket which can be used for all type of transportation vehicles. The objective is for the convenient use.

The second goal is "to decrease private vehicles". The term private vehicle means private cars. If more private cars are widely used in the city, this will lead to the traffic jam and emit lots of toxic gases such as carbon dioxide which can harm the human's health. To decrease the private transport, we promote two policies. First, establish the special lane for car pool and bicycles. And second, we imply the government policies which are increases car taxes and do not subsidize fuel cost.

It certainly impacts our city in both "Green" and "Safety" aspect because transportation is also the one indicator of City Development Index (CDI) which is partly calculated by "Infrastructure of Transportation". Firstly, we would concern in "Green aspect" . In detail, we could divide into 3 impacts e.g. Carbon emission rate, Green space and Population. Another one is "Safety aspect".

Green aspect of transportation

1. Reduction in Carbon emission rate

If we could reduce private transportation and increase publics, the number of usage vehicle would be decreased on the same way. The usage fuel rate would be diminished concordantly, the imported expenses are also. According to the Kyoto protocol, if we could decreasingly emit greenhouse gas, we would sell "Carbon credit" to developed country. It could multiply an income, also.

2. Increase green space

Reducing private transport is linked to reducing car parking area and road area in the future also. The city could implant more public space like Public Park and add more green space also.

3. More concerning in "Environment"

If traffic problem was reduced, population would have more leisure time. People would concern environment more.

Safety aspect of transportation

The public transportation is trusted to be the most safety and fastest way to ship mass.

After the private transportation was reduced, a traffic accident would be decreased certainly because

the traffic density would be reduced. The method which could help implanting "SAFETY" to the city is training the driver strictly, construction of infrastructure by universal design and thoroughly design and enforcement the law. All of method could base the traffic conscious mind to the population and it would make the city to be the safety city definitely.

According to both impact, we could instill in the ideal city. All of the population would stay in our city peacefully.

Conclusion

Things can be concluded in advanced from our discussion of ideal city are:

1. **Farsighted**

In designing an ideal city, we have to see things or matters in a whole, thus we are able to prudently plan the city for the future. In example, there is a planning factor (prediction age alike; i.e. 20, 50, or 100 years) to be added in the further calculation of a city infrastructure, such as water treatment plant, railways, roads, etc.

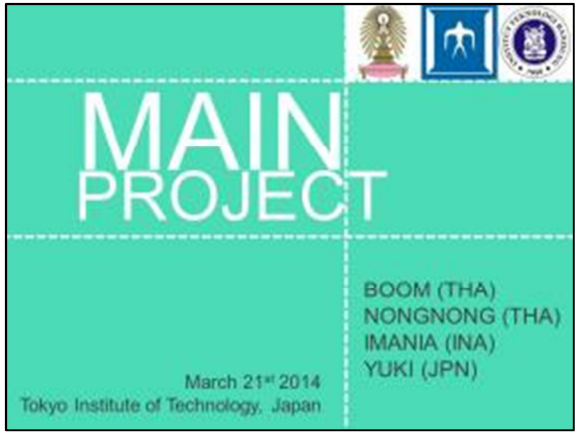
2. **Resourcefully use the nature**

Of course, we do not want to waste the nature just for a short generation, but we want it to be everlasting for the future of our descents. Hence, discreetness is so important to be implemented as a value of life in an ideal city (especially to achieve a "green" city, where we can't have damaged ecology/environment in our city).

3. **Integration from all parties**

Good approach of technical aspects would be easily misspent if we separate out the non-technical aspects in the city planning and development, such as economics, social psychology, and employment. This is why we need integration from all sectors so that we could have a "really healthy" city (corruption-free, high happiness index, etc.), particularly to engage our "safety" goal of the city.




MAIN
PROJECT
BOOM (THA)
NONGNONG (THA)
IMANIA (INA)
YUKI (JPN)
March 21st 2014
Tokyo Institute of Technology, Japan

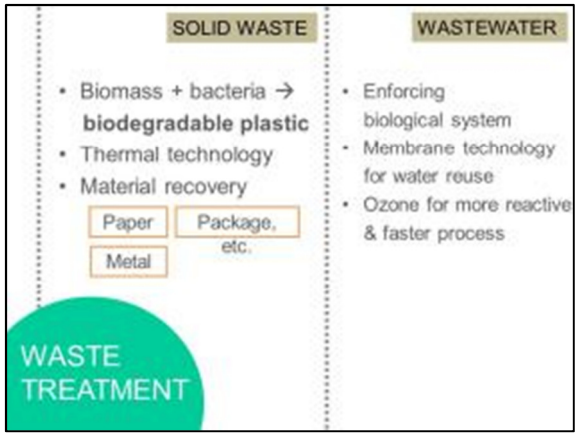

OUR IDEAL CITY?
GREEN
& SAFE
CITY

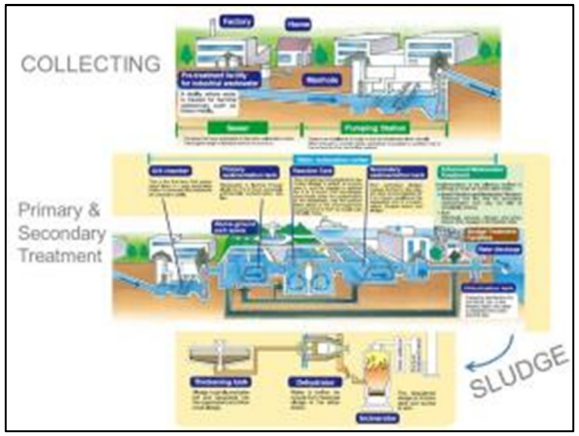

WHY?
CONVENIENT
IMPROVE QUALITY OF LIFE
HAPPY PEOPLE ☺

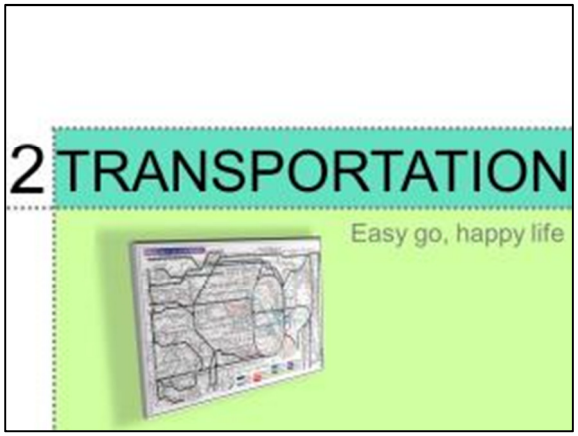

1 WASTE
Clean city, lovely city
SOLID WASTE
WASTEWATER


GREEN CONCERNS
(Public Places)
• Encourage 3R & separating waste (material-cycling society)
• Clean city
• Good government practice
- Social campaign
- Incentive scheme
• Clean river & ocean > sporting spots
• Reclaiming wastewater > fountain, toilet flush, etc.
SOLID WASTE
WASTEWATER

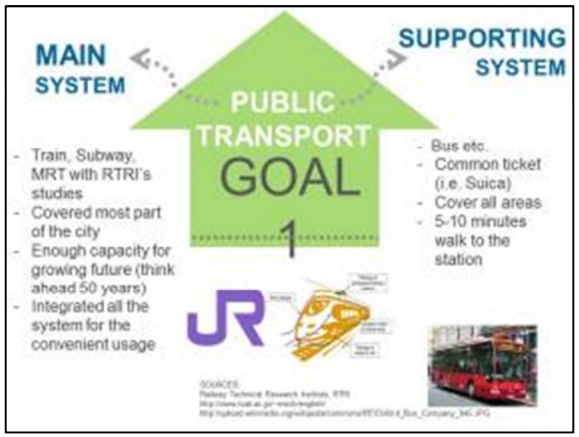

SAFETY CONCERNS
(Public Health)
• Prevent leachate contamination
• Prevent air pollution from waste burning
• Prevent flooding
• Prevent water-borne diseases
SOLID WASTE
WASTEWATER

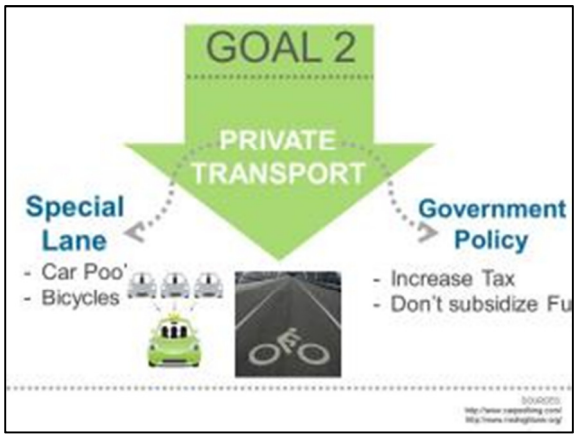

SOLID WASTE
WASTEWATER
• Biomass + bacteria → biodegradable plastic
• Thermal technology
• Material recovery
Paper
Package, etc.
Metal
• Enforcing biological system
• Membrane technology for water reuse
• Ozone for more reactive & faster process
WASTE TREATMENT


COLLECTING
Primary & Secondary Treatment
SLUDGE

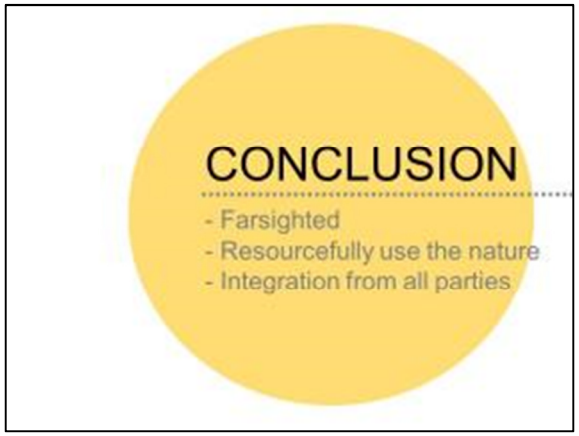

2 TRANSPORTATION
Easy go, happy life


STUCK IN TRAFFIC?


MAIN SYSTEM
SUPPORTING SYSTEM
PUBLIC TRANSPORT GOAL 1
- Train, Subway, MRT with RTRI's studies
- Covered most part of the city
- Enough capacity for growing future (think ahead 50 years)
- Integrated all the system for the convenient usage
- Bus etc.
- Common ticket (i.e. Suica)
- Cover all areas
- 5-10 minutes walk to the station


GOAL 2
PRIVATE TRANSPORT
Special Lane
- Car Poo'
- Bicycles
Government Policy
- Increase Tax
- Don't subsidize Fu


IMPACT
GREEN
Decrease carbon emission rate
By less in private transport
Increase income
(Carbon credit; Kyoto Protocol)
Decrease imported fuel
More green space
By less parking lot (Can produce more green!)
Everyone have more time
Care environment more!
SAFETY
More safety for public
By properly train for driver
By properly construct infrastruct
Universal design process
Pavement research
Noise testing
By enforcement policy
Police
Peacefulness


CONCLUSION
- Farsighted
- Resourcefully use the nature
- Integration from all parties


THANK
YOU



ASEAN IN 2030-UTOPIA

Group 3

Boat(CU), Jaja(CU)

Astryd(ITB), Mei(UGM)

What is an ideal city? The first thing that came up in our head is the Utopia city, the city of the perfection. Thus, our group would like to use the Utopia city as a role model of our ideal city that we call ASEAN in 2030. To create the city, there are three main components of the city that we would like to focus: people, public transportation, and waste management.

People

People are the heart of the ideal city. We human have been created to have bigger brain than other animals. It is the purpose of god showing that he wants people to rule the world. Nothing can be built apart from human abilities. Ability to control mind is the most important thing. The key of success is human's mind set management. If people have the ability to manage things properly the city and the social will be moving forward quickly. We should plant the root of responsibility into the children in the city. When the youth has the perfect mind set, they are adults in the future. The city will be activated by high quality people that will make perfect city happen. Therefore, we should focus on people for the first factor. If people are perfect, city will be perfect.

Public Transportation

People want the transportation that reliability and user friendly. But there have ton of obstacles which irritate them including the lacking of the transportation network, the congestion of transportation, and the disruption of the system. Therefore, the best way to reduce the problem and maintain the flow of the system is to create the efficiency one. There are two things that we should consider; the network of the system and the facilities.

Firstly, the citizen has to easily access to every parts of the city. In order to do so, it doesn't only create the network of the transportations cover the entire city, but also the various types of transportation are needed to decrease the dependency on one system and the congestion. Besides, the amount of time spending from one point to another should be minimized; this is the key to reduce the congestion of the transportation in the city. Consequently, the flow and efficiency of the whole system are increased; it is also improve the quality of life of people in the city. The lesser time they spend on traveling, the higher quality of their life.

Secondly, the facilities of the transportation city play the important role to pursue the dream of ideal city. Everyone should be access to the system without any barriers regardless of their physical body. For example, there must have the facilities that are convenient to the handicapped or needed people including a lift from the main floor to platform level; moreover the space for a wheel chair and the priority seats should be provide in all type of transportation in the city. Lastly, the safety of the system should be considered, the facilities must contain both passive and active protection to the passengers in case of emergency. For instance, the train platform must have gates between the passengers and the rails to protect the passengers from falling to the rails; also the exit sign should be always cleared to raise the efficiency of evacuation in case of emergency in the system.

Waste Management

Every day people produced waste which can in solid, liquid or gas phase. In our ideal city, waste

management to be applied to solid waste and waste water.

Most waste produced by humans in modern time is solid waste. The solid waste that has been generated should be treated well. So it will not cause problems for human health and for the environment. One of the treatments of solid waste by way of the thermal process is hydrothermal. We choose hydrothermal because it doesn't need pretreatment such as not requiring the enumeration or drying. In using this hydrothermal, it needed water and thermal at temperature of 200^0C. Waste water from hydrothermal will be recycling back into the process so there is no waste of water. The results of hydrothermal are dry material that can replace coal so it can be fuel (fossil).

In addition, beside to treatment solid waste that has been produced, it needed also a way to reduce waste by way of a more sustainable use of biodegradable plastic. Plastic can be degraded naturally by bacteria in the soil and in water.

Liquid waste generated from homes and industries would need to be processed so it's not to pollute the environment. By using standard processing using biological process and the addition of advanced treatment of the water that is obtained can be dumped into the river. However, for our ideal city, a water reuse system is needed so that the treated water is not only discarded but utilized as a bus or train washing water , flushing water , fountain , etc. (for public facility) . In addition, in the event of a crisis it is necessary to clean water also makes the water drink water. To make people dare to drink the treated waste water into drinking water is necessary mind set of the society and also the security of a given company to people who drank the water.

Environmentally Friendly

The transportation, we visited to the Railway Technical Research Institute, focusing on the parts ' research and development activities for the future of railways " is promoting basic RTRI Researches into development of technological tools and investigation of certain phenomena that would lead to a revolutionary breakthrough in R & D, in addition to technological developments that could have a major spillover effect when put into practical use. In Practice, RTRI fine play has defined work areas , each Comprising several sub - areas Consisting of multiple R & D themes .These Technology can improve the quality of the public transportation in the city , Also the safety of the people who use it . Lastly, the Technology of Transportation developed like the Hybrid Train or Maglev trains can reduce the use of fossil energy pollutes the which of the environment.

For the waste management, steps of user environmental friendly are as followed; the first being an analyst after the recycling / disposal and recovery and the latter is a collection of Transportation. After that step on the road to the right , we are in the program learn about the Solid Waste and water management for the energy they will be able to reduce waste in the city . There are 3 methods from the lab of Prof. De. Kunio Yoshikawa (Dept. Environmental Science and Tech), namely: hydrothermal, Pyrolysis and Gasification . As well as the two assistant of Prof. Kunio is Miss Por. from Thailand which examines the Renewable Biodiesel is a fuel made from various kinds of resource and Miss Sri from Indonesia Hydrotmental that examines the treatment.

In addition, the Water Treatment technology is able to reduce the waste water the which can be Harmful to the environment, such as the system used by the Bureau of Sewerage Tokyo Metropolitan Government is a company that processes sewage system in the Tokyo area plays an important role in ensuring environmental a safe and fun and in the arrangement of the water circulation system healthy. In addition to cleaning water contaminated by use in daily life and activities of citizens of Tokyo. In particular, the company contributes to the environment by helping to reduce the use of natural resources and energy savings by utilizing a variety of resources in wastewater and facilities.

In conclusion

To pursue our ambition of creating the ideal city in ASEAN in 2030, according to the figure one below, there are many keys to carefully consider: people, who are the most important key; the public transportation system, which connect people in the city; and the waste management system, which increase the quality of life and the hygienic. However, no one can deny that the development of the city

shouldn't affect to the environment to create the sustainable city. No matter how advanced technologies you have, if the technologies are harmful to the environment, we cannot have the Ideal city.

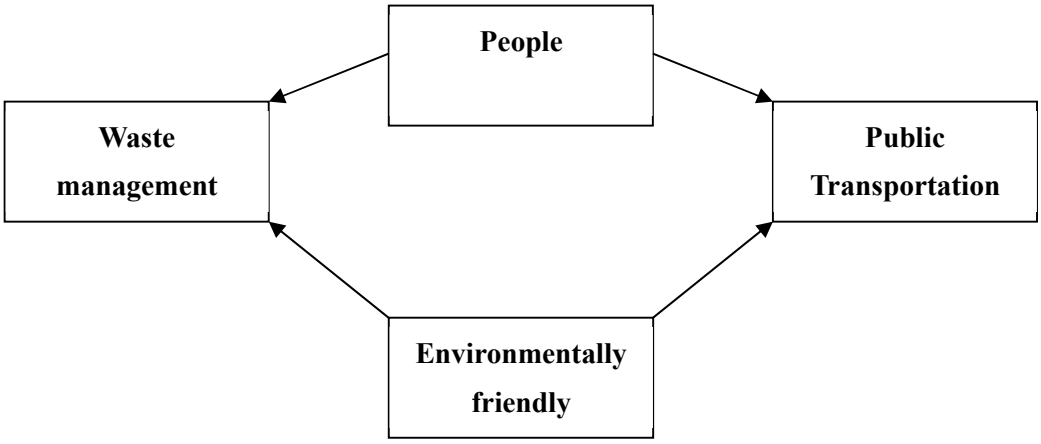


Fig1. Shows the summary of the keys to achieve the ideal city





PEOPLE

Mind set management



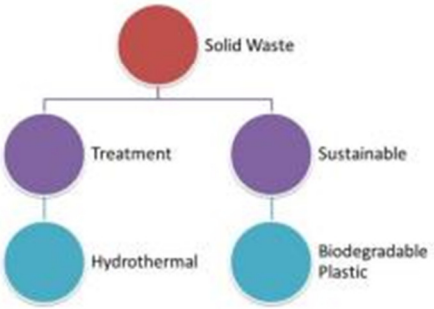
- Waste management
- Transportation

Waste management

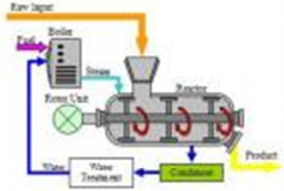
SOLID WASTE

WASTE WATER

SOLID WASTE



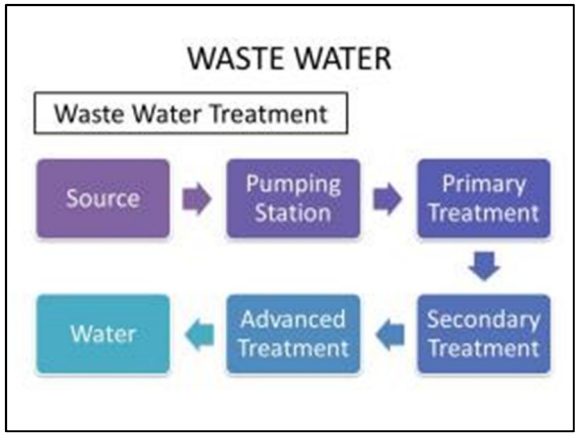
SOLID WASTE

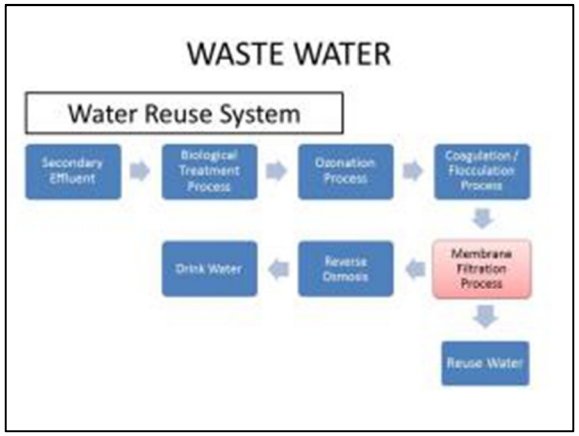


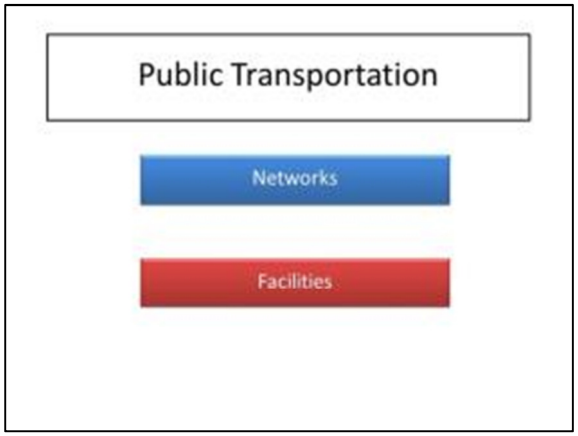
Hydrothermal

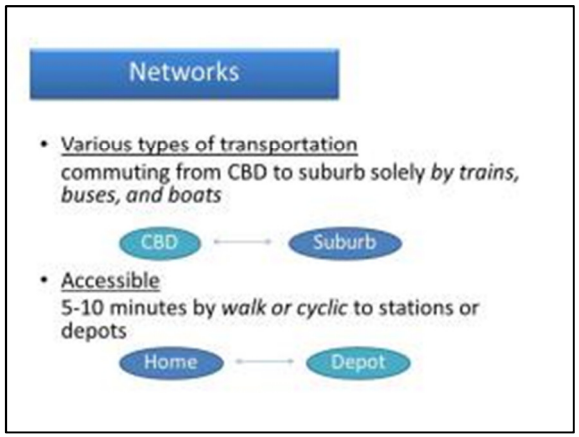


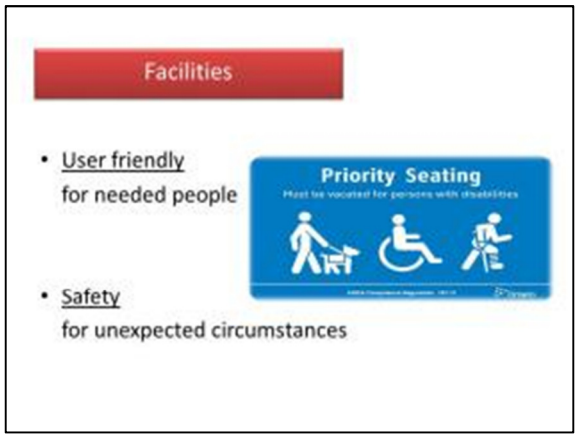
Biodegradable Plastics

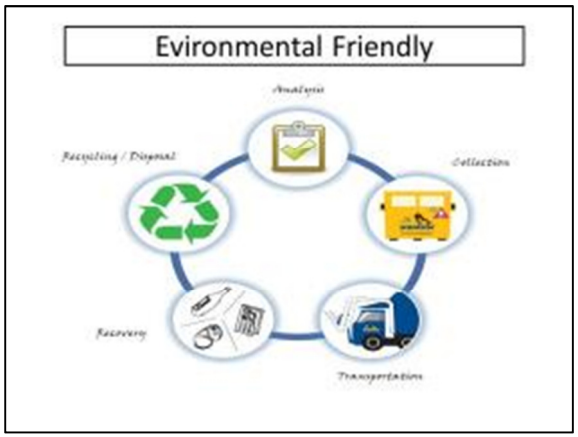

WASTE WATER
Waste Water Treatment
Source
Pumping Station
Primary Treatment
Secondary Treatment
Advanced Treatment
Water


WASTE WATER
Water Reuse System
Secondary Effluent
Biological Treatment Process
Ozonation Process
Coagulation / Flocculation Process
Membrane Filtration Process
Reverse Osmosis
Drink Water
Reuse Water

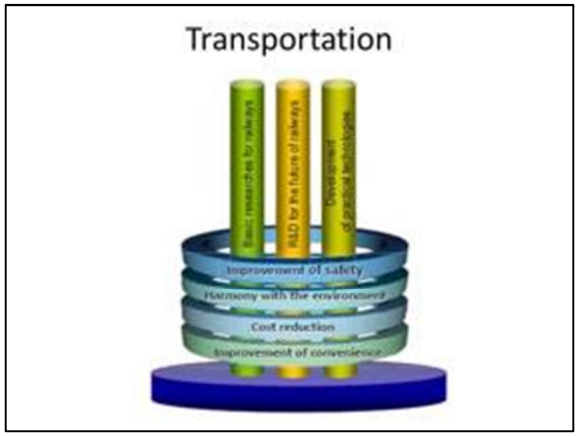

Public Transportation
Networks
Facilities

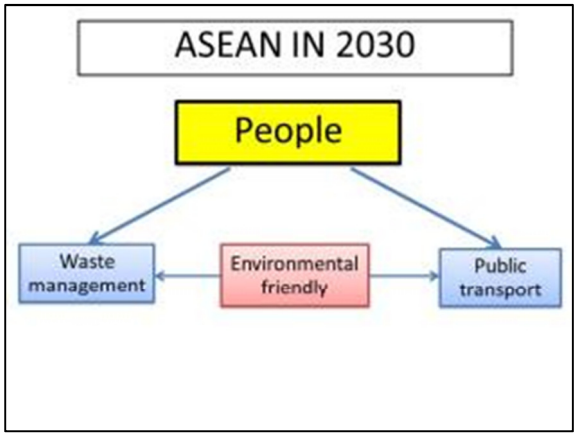

Networks
Various types of transportation
commuting from CBD to suburb solely by trains, buses, and boats
CBD
Suburb
Accessible
5-10 minutes by walk or cyclic to stations or depots
Home
Depot


Facilities
User friendly
for needed people
Priority Seating
Safety
for unexpected circumstances


Evironmental Friendly


Waste
Management
Solid and Water
Water Treatment


Transportation
Improvement of safety
Harmony with the environment
Cost reduction
Improvement of convenience


ASEAN IN 2030
People
Waste management
Environmental friendly
Public transport



THANK YOU



Balanced City

Group は

Peace(CU), Minori(Tokyo Tech)
Dikra(IBT), Listi(ITB), Tan(CU)

What are some problems we are facing?

In developing country, traffic volume is increasing rapidly. It makes possible to carry person and object to anywhere they want. We can say that traffic volume is a measure of development of the country.

However, traffic has other side; it causes some serious problems such as congestions, high accident rate, air pollution and so on. The government attacks this problem but it is not enough.

Bad waste management is a problem we have to solve. Total amount of solid waste is expected to be double in next 15 years. The negative impact cause damages to environment and their health. This impact is so serious for 15 millions people in informal sector who works in the dump. When it comes to cost of improvement, they bear an economic burden. It does not make sense to force economic burden on local people for preservation of natural environment. We have to consider both of it.

Solution: Balanced City

There are three aspects that we should consider in making an action towards city problem. Government needs long-term solutions which is effective, cost-efficient, and maintainable. Sustainability is a key factor for the system. Meanwhile government policies are made to make things proper, we also need to keep it pleasurable to the society. People want to achieve good quality of life such as a clean city but with little effort. Things should not be complicated. After considering the side of government and people, we also need to be aware of environment issues. What we do now will affect the next generation's life so we need to exploit our natural resources wisely and manage wastes especially the hazardous one. Managing between the factor of happy society, sustainable system, and eco-friendly city, we will have a solid concept called "a Balanced City".

Transportation

For the transportation system, for our city, it is a combination from the interesting parts of different countries. The main method of the transportation would be the train system. The train system will cover all the areas of the city in a circle. This method is taken from the Yamanote line of JR in Tokyo. The train line has no start or ending station. On some stations on the outside of the ring, three will be transit stations where citizens can transfer onto the lines linking to other cities. Each main stations will have a perpendicular line that links into the center of the circle. Along those lines, there will be stations along the way. At the center of the ring, there will much congestion since people will be transferring to other lines at that central station. To avoid congestion, we designed the stations to split into two sections; the north and the south. The north station will link to the lines coming from the northern part of the city. The south station will link to the southern lines. Separate pathways are constructed to avoid people from jamming into each other.

Another method to produce a Balanced City transportation system is reducing amount of car usage. To reduce car usage in the city we plan to charge high parking fees. If parking fees are high, citizens must find other methods to travel. Therefore, cars will be reduced significantly. Not only the parking fees, we will charge high taxes on cars as well. If taxes are high, the citizens would not want to user cars and keep car consumption to its minimal.

Since trains will be the main transportation system in this city, much of the budget will be allocated to train systems and the quality of the facilities. For those people who live further away from the stations, they can drive to their nearest station and park their cars in the station. Then, they can continue their journey with the public train system.

Policies and campaigns will be promoted regularly such as a "Car Free Day" or a campaign to use bicycles more often. Cycling trends can also be promoted to drive the people to love cycling and see the benefit of preserving the environment.

Waste Management System

One of the current problem we've been facing toward the solid waste management is mountainous volume of solid waste left unprocessed in the open dumping sites for years. This results to the decreasing quality of healthy environment, especially to the people who live near the disposal site. According to this given situation, our idea to improve the efficiency for solid waste management involves the participation from society. The waste generated from the household and factory firstly needs to be sorted out according to specific categories. This will make the waste processing much easier and more efficient as we will separate the waste into organic and inorganic matters. The organic waste will be taken into a process to make it into fertilizer which is very useful for agricultural sector and also it can be made into biomass energy. The inorganic waste will be processed into the incinerator and the matter produced after the process has taken place will be used as the cement material.

We also concern about the problems in waste water management. Water is a very important resource to human being and in some part of regions in the world, many people are experiencing the water scarcity. That's why we come up with the idea to take the best advantages in water usage by implementing the water reclamation and reuse system to get it back to the fine quality before releasing it to the river or sea. We also need to take some actions in regulation and law enforcement implemented to the society to raise their awareness about the importance to preserve our environment.

City Structure

Our ideal city is designed as a city block. There is a system of public transportation which railway system is a major method. Due to that idea, we design a circle railway travelling around the city and some stations on the circle line connect to stations of other cities which are important ones such as business areas. Moreover, most of the stations on this line have parking lots as park and ride areas where citizens living in suburbs can drive their own cars and park at provided parking lots, then travel by public transportation to the central city. Definitely, we believe that this idea can mitigate a problem of traffic congestion in the downtown. Additionally, some stations on the circle line can connect to the downtown by minor railway which can divide our city into many parts. Each part is specific zone such as business, residential and industrial area.

Starting with residential area, there is a three-lane road as a main one travelling around this zone. The inner lane is a road for bicycles and the remaining lanes for public buses and private cars. Many bus stops are provided around this area, so people can walk or drive from their houses to the bus stops, which is an easy way to access places in this zone. In this area, there are all amenities that are substantial for our daily lives, such as a hospital, shopping mall, school, police station and park. Thereby, nationals do not need to travel far away from their homes. Because a lot of bicycle parking racks are provided near the bus stops, we expect that people will travel in their neighbourhood by the bicycles and travel by public transportations to access other areas especially capital city. This can result in less pollution in the ideal city.

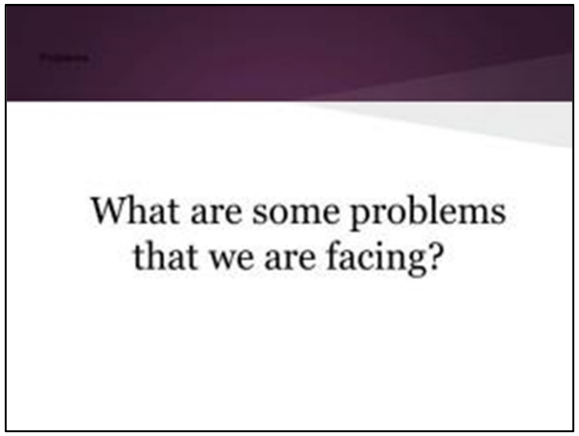
For residential and business area, there should be more than one train station for the convenience, and only a train station in industrial area is enough since most people do not want to live in this area, so it is not crowded. Therefore, the government can save their money. Lastly, water reclamation and reuse centre and incinerator are built in this district, which can lead to less pollution in residential areas and healthy citizens.

Conclusion

The Balanced City combines three interesting factors from three cities - Chicago, Tokyo, and Singapore. In Chicago, cities are designed and placed in blocks. In Tokyo, the JR Yamanote line was the blueprint of our train system structure. In Singapore, there is a sufficient facility of every kind in each area of the city. High technological waste management can be implemented safely and without the complaints of the people's comfort if we plan the city well. A Balanced City can be implemented in real life if citizens all have the same mindset, understanding, and passion to make a change persistently.




5th ASCENT
Final Presentation
"Balanced City"
Group "は"


What are some problems
that we are facing?


Lack of public transportation

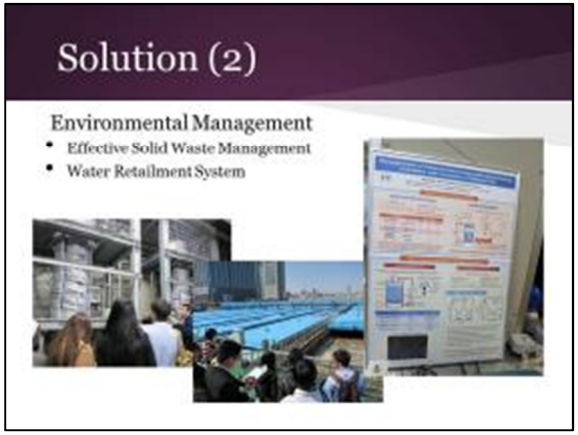

Traffic Congestion


Bad Waste Management

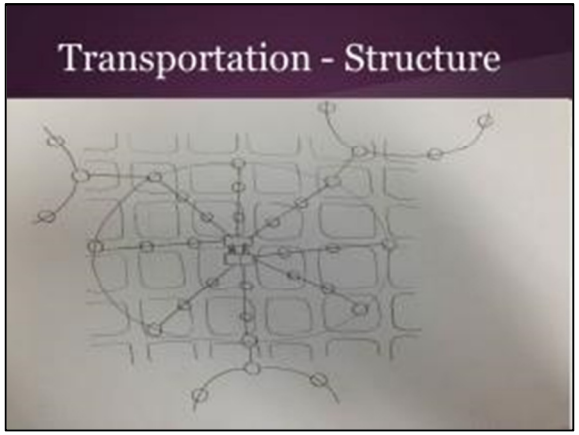

Solutions


What we need
Sustainable System
Ideal:
Balanced City
Happy Society
Eco-friendly


Solution (1)
Better Transportation Facilities & Strategic Policy


Solution (2)
Environmental Management
Effective Solid Waste Management
Water Retailment System


Transportation


Transportation - Structure


Transportation - Policy
Charge expensive parking fee

Transportation Policy

Increase car tax



Transportation - Policy

Parking space inside the train stations



Transportation - Policy

Car Free Day

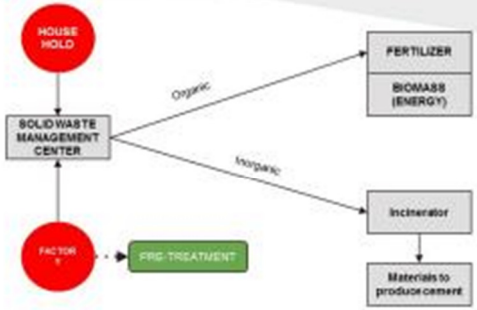


Waste Management

Waste Management



Solid Waste Management



Water Waste Management

- Water is a limited and important resource
- Bad Example = Indonesia and Thailand



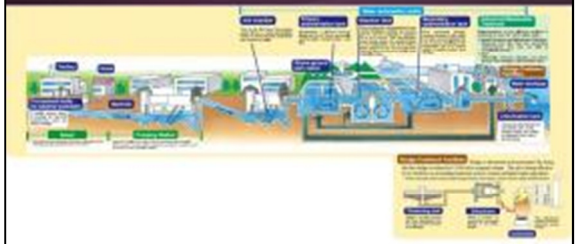
http://www.ecofast.com.au/media/wysiwyg/water-and-waste-management.jpg

Water Waste Management

Make best usage of water

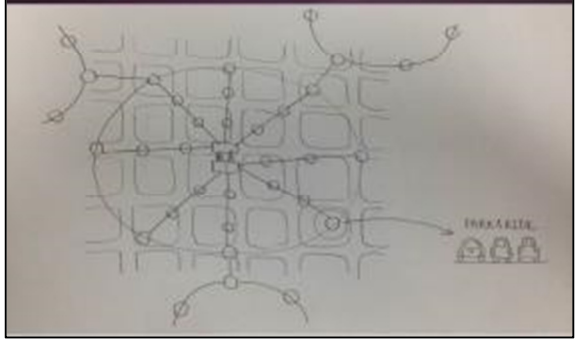
Examples: water reclamation and reuse system, law enforcement, etc

Water Waste Management

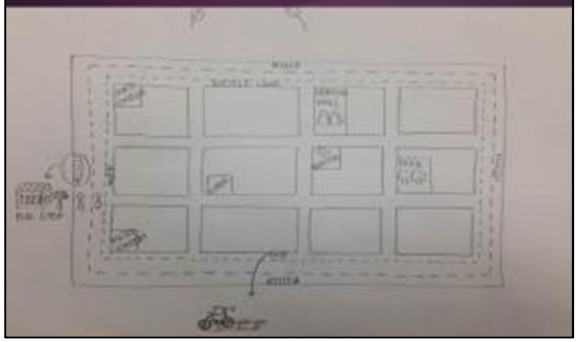


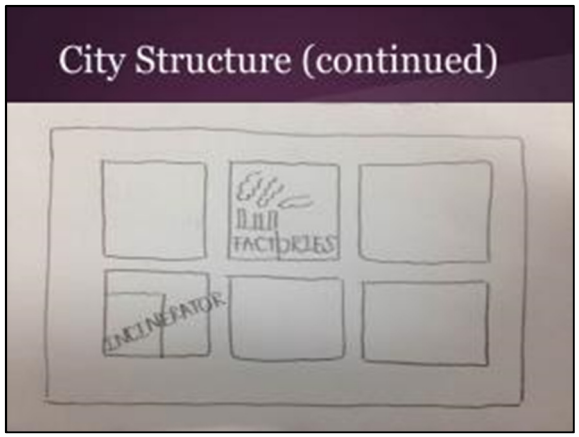
City Structure

City Structure

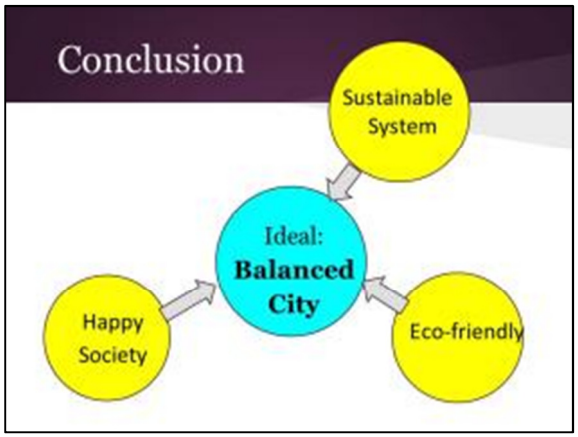


City Structure (continued)




City Structure (continued)
FACTORIES
INCINERATOR


Conclusion


Conclusion
Sustainable System
Ideal:
Balanced City
Happy Society
Eco-friendly


Conclusion


Conclusion
3. Possible!
-
Singapore+Tokyo+Chicago
BALANCED CITY!


Thank you!
Questions?



Eco Sustainable City Concept

Group C

Putra(ITB), Reo(Tokyo Tech),
Pipat(Tokyo Tech), Palm(CU), Aldia(ITB)

Introduction

Eco-sustainable city is the name of our ideal city. This city compound of two tasks, eco–friendly and sustainable. Eco-friendly means this city should produce zero emission by harmless operation in our daily activities while sustainable means no waste during the usage of every product or service because of close loop operation. This eco-sustainable concept can be achieved by utilizing 2 key aspects which are policy enforcement and technology implementation

We want to integrate the waste management system into Transportation system so that both aspect can operate harmonically by means of Technology Implementation and Policy Enforcement.

Transportation System

There are two main topics concerning in transportation problem. First, eco-transportation problem which comprises of noise pollution and air pollution. Second, convenience problem which comprises of traveler can easy lost the way, how to travel inside the town and disable person. The examples for solving all these problems are material replacement, noise reduction structure, improving more convenience choices, noticeable signs, provide more elevators, route calculator software.

Transportation models cover all ranges of distance; for example, trains cover long intercity distance, buses and light tram covers medium intracity distance, and rental bicycles for short distance. This allows rolling out public transportation business models from both public and private sides.

As at the time of the program was in Japan, these are aspects in compliment to Japanese train systems.

- **Navigation in a train station**
  More train lines means larger platforms. An ability to catch a train on time is important, that energy used in commuting is not wasted by missed passengers.
- **Handicapped people friendly**
  Public transportation means public. This means a train systems must be able to provide service to handicapped or disabled people.
- **Convenient route selection**
  In addition to navigation in a train station, understanding routes and choosing best paths are also important in effective commutation.
- **Low noise operation**
  Trains are known for a noise maker. They are sometimes built inner a city or in natural area. Noise they create may disturb people or livings along their path.

The followings are ideas proposed to handle with the issues.

- **Clearer signs** – Signs can be colorized and have larger text and symbols. Passengers can see from afar thus have more time to consider a path they should take.
- **Floor navigation** – In some train stations, their floor plans are too complex to be put on a sign. Having painting on a floor can guide passengers to their destination.
- **Elevators** – Elevators can transfer all people from one level to another. Although it may not be cost

effective to build many, it is important to have for handicapped people.

- **Route calculator software** – Computers have become faster everyday also Japanese railway. Railway becomes too complex to connecting dots by hands. Utilizing computers can give best routes in a second.
- **Wheel / Rail material replacement** – They are made of metal which is loud when they are in contact. Replacing material may be made from biodegradable or recycled products. New material may have shorter lifetime than metal, but it may generate or promote new businesses.
- **Full-height wall** – A wall can prevent noise from trains passing in/out from a station.
- **Damping structure** – Rubber or ramps can be installed to reduce vibration in places where trains pass.

Car Usage Controlling Policies

Since public transportation may not answer some specific needs from people, motorization may occur. Policies can be issued to control motorization rate. Policy examples are

- **Electric cars** – Electric cars produce no CO_2 and promote centralizing CO_2. Need in electricity drives more need in larger power plants. This makes investment in CO_2 handling devices feasible.
- **Car pool** – Car pool means sharing a car with others commuting on a same way.
- **Electronic Road Pricing** – Charge a driver who drives pass a gate.
- **Odd/Even rotation** – Cars are divided to which days they can be on road.

Waste Management System

In managing waste, our city concept is to minimize the production of waste and utilize the still produced waste through 2 key aspects which are Technology Implementation and Policy Enforcement. Through the implementation of the 2 key aspects, our expectation is to minimize and even eliminate the presence of unutilized goods (waste) in our city.

In order to fully utilize our concept, we divide the waste into several category based on the characteristics of the waste itself, which are : Municipal Solid Waste and Liquid Waste, and implement the 2 key aspects on both of the waste accordingly.

1. Municipal Solid Waste

Municipal solid waste is a solid waste that is produced as a by product from people daily activities in urban and sub-urban area. This waste consists of organic waste and non-organic waste and the portion between organic and non-organic waste depends on the city lifestyle. In order to manage municipal solid waste, our city would like to implement these following points in both under Technology Implementation and Policy Enforcement.

Technology Implementation

- **Energy Conversion Process:** Based on the raw material (organic waste and non-organic waste) we would like to apply Waste Fired Power Plant to incinerate the burnable waste to convert the waste into electriciy. This electricity will then be integrated into our city transportation system as a mean of power supply. Beside electricity we would also like to apply Thermal Decomposition process into our solid waste to produce fuel (Gas, Solid, and Liquid) and also fertilizer (Ammonia) to be used in city daily activities.
- **Sorting Process:** It's important to separate materials to decrease damage to incinerator. Of cause you can separate several garbage by using chemical treatment, but you should use strong high quality incinerator and it cost too much.In other country people should make the policy and separate several materials in their own house like yokohama, separate the garbage in their house, burnable, unburnable, battery, spray-can, bottle, metal plastic, old clothes, paper, big garbage, and so on. It'll make easy to recycle and decrease damage to incinerator (3R Mechanism).

Policy Enforcement

- **Policy on Hazardous and Non-degradable Waste:** enforcing policy on reduction of hazardous and non-degradable waste through reward and punishment method.
- **Waste Reduction Through Utilization and Enforcement of 3R (Reduce, Reuse, and Recycle):** enforcing policy on 3R process to reduce waste through implementation of incentive and stricter policy on solid waste production in both household and industry scale.
- **Prohibition on Large Scale Landfill:** prohibiting large scale landfill as well as promoting more eco-friendly waste incineration system.

2. Liquid Waste (Waste Water)

Liquid waste or waste water is a liquid waste that is produced as a by product from people daily activities in urban and sub-urban area. This waste can be divided into black water and grey water and can be minimized by implementing 2 key aspect of waste management in our city namely Technology Implementation and Policy Enforcement.

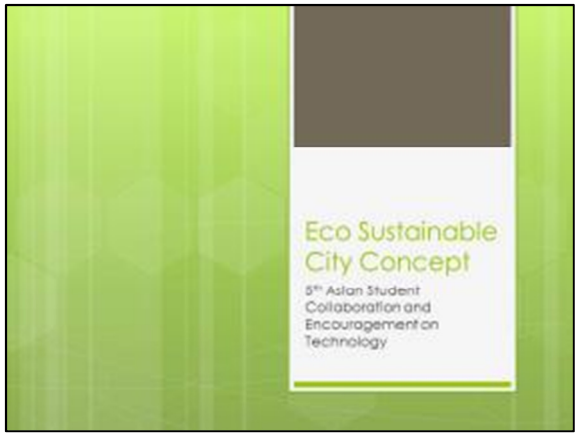
Technology Implementation

- **Cleaning Process:** Cleaning process comprises of water and sludge treatment. implementation of cleaning process to clean black and grey water into clean water employs 3 processes which are : Physical, Biological, and Chemical. This clean water will then be reclaimed to be used in office and house sanitary system.
- **Energy Conversion Process:** Sludge as a by-product from water cleaning process will then be further processed into energy by means of incineration to produce electricity and solid fuel as well as fertilizer. Sludge can be obtained as the by-product of water treatment with further thickening process.

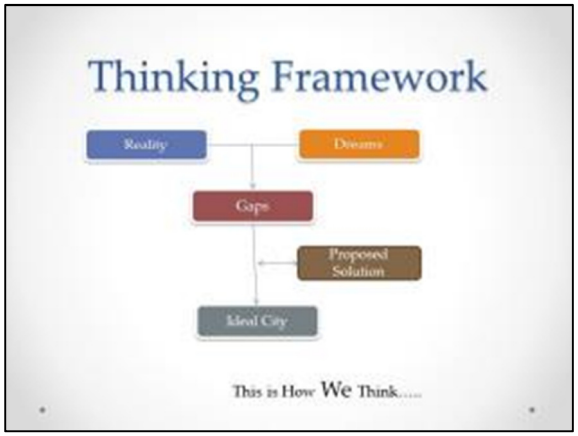
Policy Enforcement

- **Policy on Water Pollution and Eco Lifestyle:** enforcing the law that prohibits the disposal of hazardous item into water system and set a higher standard on waste water produced from industry and household.



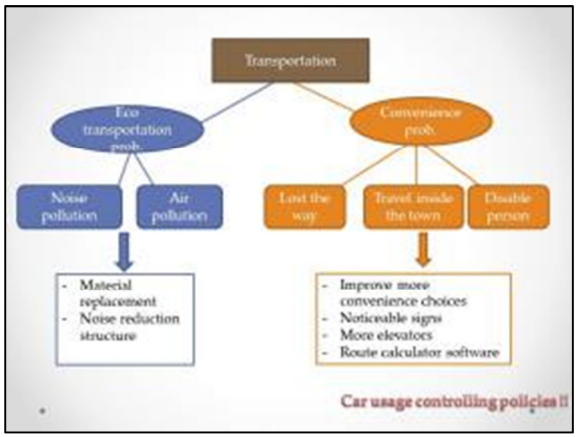

Eco Sustainable
City Concept
5th Asian Student
Collaboration and
Encouragement on
Technology

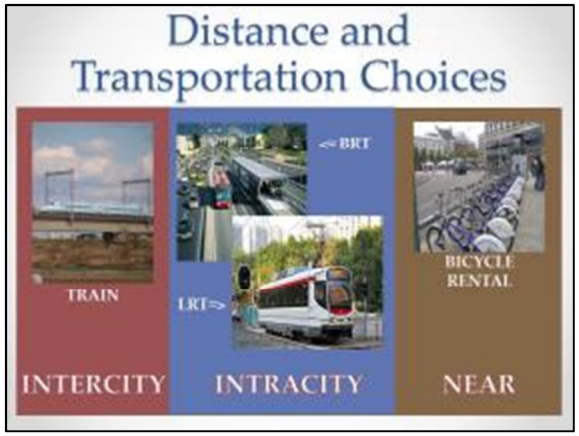

Background Problem
Unsustainable Waste
Management System
Inconvinient and Un-
Eco Transportation
System


Thinking Framework
Reality
Dreams
Gaps
Proposed
Solution
Ideal City
This is How We Think.....


Our Dream....
Ideal
City
Policy
Enforcement
Technology
Implementation
waste
Eco
Friendly
Sustainable
Zero Emission = Harmless Operation
Closed Loop Concept = No Waste


Transportation
TOWARDS GREEN AND FRIENDLY PEOPLE RELOCATION


Transportation
Eco
transportation
prob.
Convenience
prob.
Noise
pollution
Air
pollution
Lost the
way
Travel inside
the town
Disable
person
- Material
replacement
- Noise reduction
structure
- Improve more
convenience choices
- Noticeable signs
- More elevators
- Route calculator software
Car usage controlling policies


Distance and Transportation Choices
TRAIN
<= BRT
LRT=>
BICYCLE RENTAL
INTERCITY
INTRACITY
NEAR

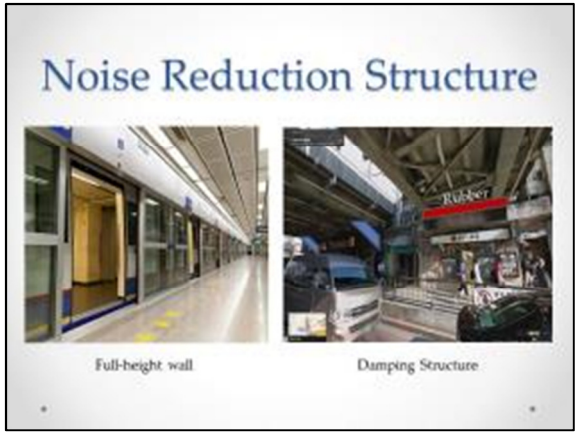

Train Systems
Targets
Navigation in a train station
Handicapped people friendly
Convenient route selection
Low noise operation
Solution Examples
More Visible signage
Elevators
Route calculator software
Wheels / Rail material replacement
Noise reduction structure


Better Signs


Elevators Everywhere


Route Calculator Software
乗換案内


Wheel / Rail Material Replacement
METAL
LOUD
METAL

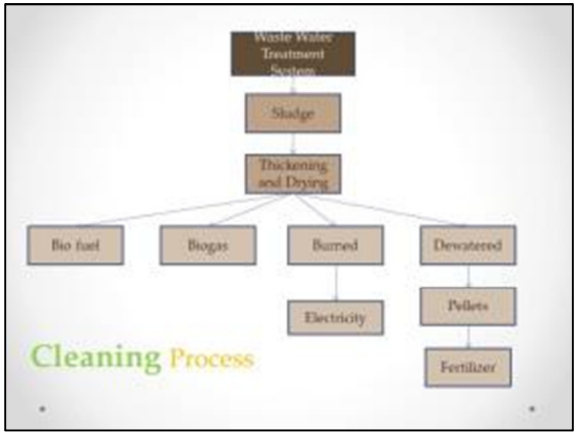

Noise Reduction Structure
Full-height wall
Dumping Structure


Car Usage Controlling Policies
CARPOOLS ONLY
Electric Car
Car Pool
Electronic Road Pricing
ODD
EVEN
ODD / EVEN Rotation
#1
#2
#3
#4


Sustainable Waste Management
Technology Implementation and Policy Enforcement

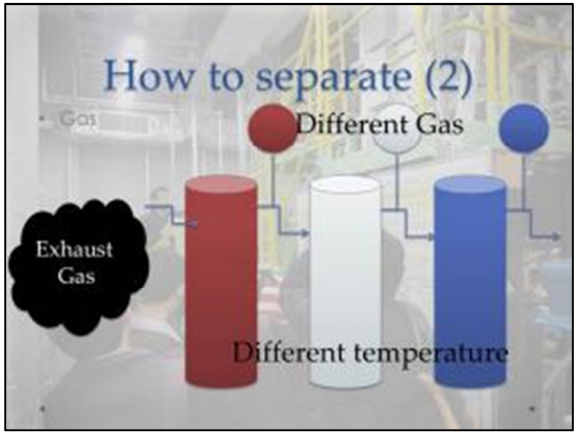

Sustainable Waste Management
Process Line
Utilization Line
Composition Line
Cleaning Process
Energy Conversion Process
Sorting Process
Waste
Waste Water
Municipal Solid Waste
Clean Water
Sludge
Organic Waste
Non Organic Waste
Fertilizer
Burnable
House, Office, etc
Electricity
Transportation
Power Plant Co-Firing
Valuable Item


Liquid Waste
Waste Water Treatment System
Water Reclamation
Physical
Chemical
Biological
Screening
Chlorination
Aeration
Sedimen-tation
House, office, toilet, irrigation, etc.
Cleaning Process


Waste Water Treatment System
Sludge
Thickening and Drying
Bio fuel
Biogas
Burned
Dewatered
Electricity
Pellets
Fertilizer
Cleaning Process

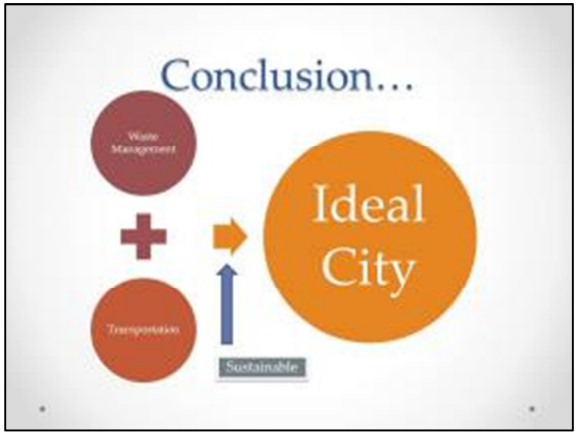

What's the problem about Solid Waste??
Landfill Almost All
danger
Bad smell
dirty


How to s
In your home
Easy to recycle


How to separate (2)
Gas
Different Gas
Exhaust Gas
Different temperature


Sustainable Waste Management
Raw Material
Energy Conversion Proce
Waste Fired Power Plan
Pyrolisis, Fischer Tropsch, Hydrothern
Ammonification
Incineration
Heat & Ash Formation
Water Steam Generation
Steam Turbine Movement
Thermal Decomposition
Synthetic Gas, Solid Fuel
Liquefaction & Fermentation
Liquid Fuel
Thermal & Biological Decomposition
Fertilizer Raw Material
Fuel (Gas, Solid, Liqui
Fertilizer
Active Carbon


Sustainable Waste Management
Enforcement on Waste Management Policy....
Policy on hazardous and nondegradable waste
Waste reduction through utilization and enforcement of 3R (Reduce, Reuse, Recycle)
Public encouragement on eco lifestyle (e.g incentives)
Prohibition on large scale landfill


Conclusion…
Ideal City
Sustainable

Personal Reports

In this section, participants report their experiences in ASCENT, what they've learned, gained, felt and also enjoyed.

All reports are ordered in Universities (countries) and name (in alphabet).

University	Name	Nickname
Tokyo Tech	Reo Azuma	Reo
	Pipat Methavanitpong	Pipat
	Minori Nakanouchi	Minori
	Yuki Tsukamoto	Yuki
CU	Pongsatorn Naksuth	Boat
	Thanikarn Pattanavanichsakul	Tan
	Santisuk Prapa-apirat	Peace
	Tawit Sangveraphunsiri	Boom
	Pattraporn Tantiwatana	Jaja
	Nualphan Udompaiboonsuk	Palm
	Visa Wangsuphachart	Nongnong
Indonesia	Meilani Adriyati	Mei
	Astryd Viandila Dahlan	Astryd
	Imania Eka Diyanti	Imania
	Aldia Faulinasari Karmaputeri	Aldia
	Mochammad Dikra Prasetya	Dikra
	Putranegara Riauwindu	Putra
	Listianing Widiastuti	Listi

Tokyo Tech Students

Reo Azuma (Reo)



I could get invaluable experience thorough this program 'ASCENT'.

At first, I walked around my own country Japan with Asian foreign students who were same age with me. Thorough this program, we could know each culture.

We visited some institutes and laboratories, which we are prohibited to enter as usual. And we learned outline of the latest research about environmental problem, garbage management, and transportation problem. We heard lecture from real researcher and professor and could ask some question to them. I impressed the pose of other foreign student. Some of them are not familiar with the theme of this time, but they have a strong motivation to study. I want to follow their pose.

I could learn many things about urban problem. It's not my major and I'm not familiar with it. This program was a good chance of thinking about the relationship between urban problem and my major, information engineering.

While this program, we have many times to talk in English. Of course we had a chat and discussed about urban problems. Discussion is really different from chat and I knew that I'm not good at discussing in Tokyo-tech AYSEAS, which is other program I joined last summer. In this time, I could practice discussing and become little good.

Of course I made friends. They are so unique and the time spending with them is very exciting. It will become a lifelong memory and I want to have a good relationship with them forever.

This is my personal report. Thank you for all members of this program, people concerned, and SAGE staff members.

Pipat Methavanitpong (Pipat)

This is a personal report about experience gained from joining 5th Asian Students Collaboration Encouragement program in Technology (ASCENT) during Mar 14 – 22, 2014. The theme of this event was "Urbanization ~Draw the future with your hands~". Throughout the program, students went to several companies and laboratories related to urbanization aspects to see how they see problems and tackle them. In addition, students had lectures and group activities together assessing what they have learnt. This report summarizes the experience into technical and non-technical experience.



Technical Experience

In this event, students visited companies and laboratories, received lectures, and performed presentation about what had been learnt. PWRI, RTRI, NIES, Shibaura Sewage Plant, and several laboratories were visited. Despite of descending from the world stage in technology innovator, Japan's precision is still at its best. I observed how they tackled problems as a system. And, they pick out problems every single one. I am moved by the achievement to

overcome pollution problems in 19th century which staffs said that it was severe than current China's pollution smog. Japan has a totally different mindset in handling with waste from other countries including developed Westerns. Japan prefers to burn waste, but others prefer to landfill. In other words, Japan process waste to intoxicate, shrink, and recycle into other products e.g. cement and fertilizer. Moreover, there are research on smart materials and improving recycling processes. For transportation, there are studies on almost all use cases, such as, road durability, platform/station optimization, transportation affecting environment.

Non-Technical Experience

In addition to technical studies, there were activities letting students become closer to each other. The first activity was cultural exchange performance. This was prepared before the event started. Students from each country teamed up and performed their cultural play. All performances asked other students to go to the front and play and dance together. I was a part of Titech team. I and my team prepared Soram dance and Ken-dama show. It was my first time doing those things. I enjoyed practicing them with my teammates, especially Ken-dama. I finally made a ball stood on its base, and I did at most 5 combos in my practice. I was surprised by traditional plays from Indonesia and Thailand. They have same traditional plays but different songs. At the end of each day I sometimes had dinner together or walked in the city together. I learnt how to speak several Indonesian words.

Minori Nakanouchi (Minori)

Through this ASCENT program, I was able to have a great and memorable experience.



Visiting some companies and laboratories let me realize that our daily life was supported by many kinds of technology such as Sewerage System, GOSAT(Greenhouse gases Observing SATellite) and Station Simulator. I was impressed that researchers made effort to find out solution of urban problems. I hope these technologies spread throughout the world.

And I was surprised that there were many foreign students in Tokyo Tech laboratories. They are really diligent and ambitious. I respect them and also feel necessity of sharing our ideas with all over the world. It is the only way to solve global problem we are facing.

Discussion and presentation in English is one of the main reasons why I participated this program. Actually, it is harder than I expected. It made me annoy that I cannot fully convey my opinion. But such an experience is my treasure. Now, I really want to study English more.

Last, I want to express my gratitude for everyone; Japanese friends, Thailand and Indonesian friends and SAGE staffs. You are really kind and reliable. I was able to have a great time for 10 days. It is treasure of my life. I hope to see you again someday.

Yuki Tsukamoto (Yuki)

1. Introduction

In this report, I want to show you my great experience of ASCENT 5th. So I write down just one event in one item.

2. Cultural Exchange Party

We Japanese members decided what we would do in Cultural Exchange Party about two weeks before the programme beginning, but we began to practice our performance just two days before. We danced

'Soran-bushi' a Japanese fisherman song and showed 'Kendama' a Japanese traditional toy. Especially it was useful for getting closer to abroad students to play Kendama with them. I think this party was a precious chance to make friends because I could not communicate other students well than I expected on the first day.

3. The lecture of Prof. Tom Hope

I took many classes and lectures in ASCENT 5th. For me, the lecture of Prof. Tom Hope was better than any other of them. It is sure that almost all of classes were good, however I think the lecture will be useful one through my life. In his lecture, he said basic, crucially important things about presentation. For example, he said we have to make our slides as simple as possible and express important factors by only our mouths. In addition, he said it is better not to send slides or resumes in a presentation and class and I think this is the main reason why I feel sleepy on lectures of Japanese universities.

4. Final Presentation

Before ASCENT 5th starts, I was worried about Final Presentation because I had never discussed and made a presentation with abroad students. It was the first time for me. However through this programme I was beginning to remember how to speak English and get confidence. So in discussion time, I was able to tell my members what I thought important than I expected. On the other hand, it was truth my members contribute the contents of the presentation better than me, so I will go on trying to blush up my skill of discussion and presentation!



CU Students

- **Pongsatorn Naksuth (Boat)**

The precious experience at ASCENT 5th



What would the world look like if everyone moves to the city? This is the question that I have before I attend the ASCENT 5th. I can say that I cannot imagine it: it might cause a ton of problems or it might good for the environment, it is upon on how the human manage it. And I believe that if I want to figure out the answer, Tokyo is the city where I can find it. Because Tokyo is now fully urbanized: around 30 million people living in the city so it is interesting to know that how can Tokyo's government handles with the potential problems, such as traffic and waste problems, from the urbanization of the city. Throughout the ten days of the program, I have lots of chance to learn and explore the waste management and transportation system of Tokyo. It is not surprisingly that the Tokyo's government implements a number of technologies to prevent and handle with the problems. Besides, there have many research institutions focusing on the transportation and waste management such as Railway Technical Research Institute and National Institute for Environmental Studies located around the city, it obviously emphasizes how much the government concerns about the problems. So, I was really impressed with it.

In conclusion, the precious knowledge that I got from the program both about waste management and transportation system in Japan is valuable. In addition, I truly want to apply this knowledge to my country or at least implement it to my daily life. Moreover, it is only the academic aspect, but also the

foreign cultures such as Japanese and Indonesian cultures that I learned. Lastly, this program is definitely a good way to broaden my perspective both academic and culture, and I do believe that the knowledge and the friendship that I got from the program will be everlasting.

Thanikarn Pattanavanichsakul (Tan)

What have I learned from this program?

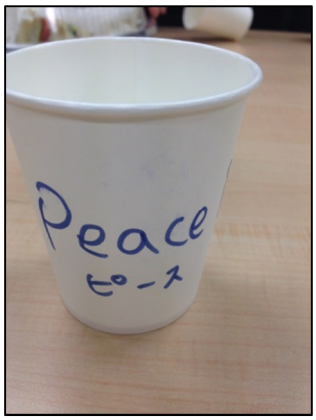


From the program, I had a good chance to visit many laboratories of Tokyo Tech and also some institutions which relating to transportation, environment and waste management and had special lecture from professors and sophisticated lecturers. I cannot imagine how I can learn all of these topics without this program. All knowledge and information that I have learned from this program are research or studies in Japan, which can solve main problems in Thailand and Indonesia such as traffic congestion and lack of landfill. Therefore, both countries usually were examples in this program. Although, sometimes, the information was quite complex especially technical words that did not deal with my field, I was interested in them. Apart from that, during this program, I have learned how to make a good presentation that is absolutely beneficial. Moreover, I have worked in multinational group, so I practiced my English and exchanged my idea with other foreign friends. Lastly, I have known new Japanese and Indonesian cultures from other participants. Similarly, I taught other about Thai culture as well. Due to cultural exchange, I was amazed that Thai and Indonesian children have the same game. Those were my expectation before joining this program. I believe that not only knowledge is important, but also relationship and social.

What do you think about this program?

In my opinion, I was very happy when I was a participant because I could make new friends who are really friendly and practice my teamwork and presentation skill. All of these are very useful for my university and working life. Before joining the program, I was not much interested in waste management and thought that some problem in my country could not be mitigated since it seemed to be no impossible methods. After the program, my idea has changed. Now, I think waste management system is substantial to our lives- this is due to that face that it can be hazardous if there is not efficient system- and nothing is impossible without a lot of research and studies, all of which I have learned from the program. I mean not only for Japan, but also Thailand and Indonesia. Furthermore, the participants are new generation people who can make the world a better place, so I believe that we can be a powerful group of people to solve current problems. I think that it is suitable to do this program in Japan because participants could compare another country to ours and learned Japanese culture because of staying for a while. Many laboratories and institution have done lots of research to resolve problems, so I think Japan is a good example for other countries. This time was the longest time when I stayed in Japan and worked with many Japanese who are very punctual and walk very fast. In Japan, transportation is totally different from Thailand. In my country, nationals prefer to drive their private cars, but Japanese always travel by public transport and avoid facing traffic jam. I think this issue is also a problem in Indonesia. In addition, there are many institutions doing research to improve some public system continuously such as railway and water centre, which can lead to high efficiency system. I would like to say Thank you for all staff organizing this program and working very hard for us. I will recommend next ASCENT to my friends who are interested in the next theme of this program.

Santisuk Prapa-apirat (Peace)



From my personal experience, I had enjoyed the 5th ASCENT very much. This was also my first time in Tokyo, Japan. As a Thai, we have always lifted up Japanese on how orderly their lives are and how disciplined they must be. Stories of Japanese manners and their heart to serve the community as a whole, keeps on resonating around me. Although I have met Japanese friends, it is not like coming to Japan and obtain the feeling where most of the people around me is Japanese speaking a language I don't understand. Coming to Japan is an opportunity to see the world in a different perspective. It was an eye opening experience to see Akihabara, Shinjuku, Ueno Park and its museums, and other tourist places around Tokyo. One of the memorable experiences in Tokyo is the massive train system. We can go anywhere by train.

The 5th ASCENT's theme – Urbanization – is a very suitable theme for us today. Since urban problems such as waste management and traffic management is a problem in which developing countries like Thailand, Indonesia, Laos, Cambodia, and other developing countries struggle to solve. Since the first few days at ASCENT, I have realized that the ASEAN community share many things in common. Not only do we share the same urbanization problems, we also share some of our cultures as well. For example, in the Cultural Exchange Party, the Indonesian team performed a game very similar to the Thai game performed right after. Gathering once in a while encourages us to overcome obstacles and makes us realize we also have friends struggling with us as well.

Because my field of study is in Information and Communication Engineering, I do not have much knowledge about environment science or about city structure planning. Coming to ASCENT have stretched my knowledge to another level. Furthermore, the knowledge ASCENT provides can allow me to research more on how my field of study (IT) can relate to environmental engineering/science and transportation systems. In these days, knowledge just in one area is not enough to make a difference so it is important to keep a breadth of knowledge to learn new concepts and new ways to impact society.

Another impression I had from the 5th ASCENT is the amount of research that is being funded and promoted. Compared to Thailand, research in Japan is much more advanced and supported. From the different labs that we have visited, even though I do not understand everything (due to difficult concepts and strong Japanese accent), I am still impressed with how much research is performed in Tokyo Institute of Technology. I am also surprised that in those labs, they have many international students including students from my own country as well.

Not only does the lab reflect how much research Japan is having, the research institutes that we have visited also show the ability of Japanese Research. In the Railways Technical Research Institute, many technologies were being used to counter the unstable environment conditions in Japan such as the earth quake. It is amazing how they can implement new technology to keep trains operating on the tracks during earth quake.

From the 5th ASCENT, I have experienced new friends, nice Japanese environment, and the passion to study more about my own country's problems. In the future, I hope that I can take part in developing a better community both locally and globally.

Tawit Sangveraphunsiri (Boom)

In developing country, "URBANIZATION" is the one of the most important method to improve their country. Although my major does not relate to this topic directly, I believe that I could adapt knowledge in my real life. Also, I love "Transportation"; especially public transportation; extremely. This is a reason why I was interested in this 5th ASCENT. When this program started firstly, I expected that I would be



received lots of good experiences and good friendships there. In addition, I hoped that I could get more knowledge about "Public transportation" to apply in my major later.

Even though this program was not first time in Japan, I felt very excited in everything; e.g. Public transportation, Prosperity, People, System. For example, first I went to Tokyo Institute of Technology (Ookayama campus), I felt this campus is very gorgeous. There are lots of "SAKURA" in front of the main building and lots of high-technology laboratory, also. New friends were extremely cool, too. Everyone was very friendly, we had talked many topics in the welcoming party. That was opening my mind widely.

Thailand and Indonesia, we are familiar with each other; e.g. Politic, Traffic, Weather; so we talked about our program-related problems often. Being compared to Japan, developed country, gave us another aspect, also. According to the first paragraph, I expected to learn Japanese management because I could use this knowledge to be applied for my country. Although this program emphasized technical knowledge, I thought that I learnt some important skills; such as Point of view, Logical skill, Japanese thinking, and Developing idea; from every institute and laboratory. That was amazing me exceedingly. I was amazed in Railway Technical Research Institute (RTRI) especially because I could learn how to develop train thoroughly. In addition, I take an interest in "Railway system" considerably. There were a lot of technical information however I was confident I had been enormously gained related skill, also.

According to my dream; working about system of public transportation; Coming to Japan, the one of the best railway system in the world, inspired me plentifully. I dreamed to be there for learning Japanese railway system. This program would be my first step to achieve my dream surely. The cultural exchange are also important in this program. I very excited what each country performed. Also, be excited about nature of every country.

I could remember what Prof. Tom Hope said in the welcoming party. "When you are happy, time flies so fast." I could not agree more. This 10-day program was very fantastic. I had an eye-opening experience. Thank for everyone who made all good things. Although this program ended, all good things would be remained forever. I hope to meet you all again.

Pattraporn Tantiwatana (Jaja)

My name is Pattraporn Tantiwatana (JAJA). I'm from Thailand, Chulalongkorn University. What i've learned after attended to SAGE program is word "UNITY". Though each of participants are having different nationality, speaking in different language, we could work together happily and successfully. I really adore Indonesian and Japanese people in everything because they are very well-organize, punctual and high responsibility. At first I used to be afraid of working with new people but after I went through the program my attitude towards group working was changing in a better way. After I studied through this program in many subjects I suddenly know what I want to do in the future. From the major and faculty I attend now is Industrial Engineering, I really interested in transportation system and hope I could have a chance to be a part of it. Last but not least, this program gave me a lot to learn and many good things which are Indonesian culture and Japanese culture. I feel so blessed that in my lifetime I had a chance to join this priceless program.



Nualphan Udompaiboonsuk (Palm)

After I was informed that 5th Ascent program accepted me to join this program, then I booked fight to Japan to experience something difference.

First day, or we can say first night, I met everyone in this program, most of them were unfamiliar for me. But it was the warm welcoming party and we had wonderful halal food together.

The next day, we were into 5 groups, and I was in Ni group. In the group, I met many international friends and one Thai friend from Japan as well. We shared some information to know each other and that was very impressed me to be in this Ni group in the morning session. Then in the afternoon, the exchange party session, we, three country exchanged our culture through the games or dance or/and songs.



The days after, we visited many places to lecture many things about the urbanization. Under the main project, every group had their own ideal city in their mind and collected all the knowledge we were given for using in our project, not only mini project but also final project. There were many modern technologies and systems; I would never forget how exciting it was.

Visa Wangsuphachart (Nongnong)

"Open your mind, open your eyes, got new experiences and new friendships"

The journey begins ……

Some says life is a journey. I couldn't agree more. For me, life is like a continuous road. Everyone has their own roads which lead them to different places. Along the way they meet different people, they face different obstacles and they have to make many decisions when it comes to the intersections.

ACSENT.. is one of the right decisions I have made. Thanks to my classmate for recommending this program and gave me such a great opportunity to be part of this journey where I bounded valuable friendship among international students.

Time flies when you are having fun …..

During these 14 days, I have learned so many things. Not only academic knowledge but learned to work with other people as a team. Firstly, let me describe in the academic field; the ASCENT Sage staffs arranged all the participants to visit 4 companies/ institute; NIEs (Solid Waste Treatment), Public Work (Pavement and bridge), Waste water treatment and RTRI (Railway Technical research institute) and Tokyo Tech's laboratories. From visiting those companies and laboratories, we gathered information little by little and apply all these techniques and knowledge for our final project presentation. The title of the final presentation is "ideal city". We were divided into 4 groups (mixed nationalities and institutes) named "I", "na", "ho" and "ri" respectively. My group called "I" consisted of 4 people (Boom, Yuki, Imania and I) and our ideal city is "Green and Safety City". Working on the final project, not only concentrating on my ideas but I had to concern about team working as well. To work as a team, we had to be open-minded. It was great that we proposed our ideas but more important we had to listen to others as well without prejudice. Apart all that, I got to know and understand people that had different experiences and cultures and YES I got brunch of new friends. <3



ITB&UGM Students

Meilani Adriyati (Mei)



In the ASCENT program 5th 2014 I get a lot of knowledge, especially related to my major is civil engineering. What I always remember is my lesson for PWRI is in the container to increase the civil engineering technology, contribute to the development of efficient high-quality social infrastructure, and to promote further development of Hokkaido to conduct R & D, technical guidance on civil engineering technology and dissemination of research accomplishments. PWRI is the parent organization of the Ministry of Road Materials Testing Bureau of Public Works, Ministry of Home Affairs which was established in 1921 and Testing Laboratories of the Department of Civil Engineering, Hokkaido Prefectural Government from the State Department that was established in 1937. Since its founding, through the efforts of former personnel, PWRI have worked hard to develop a range of new technologies and spread the use of these technologies. In addition we have fulfilled the mission of technology design, build, and maintain a variety of public works structures not only maintain the security of Japan, the nation vulnerable to hurricanes, earthquakes, and other disasters of various kinds, but also plays an important role in supporting the economic growth of our nation other than that I also learned at Railway Technical Research Institute, I was amazed by the technology that created and applied in Japan, especially in infrastructure and transport facilities in the system created by the Japanese.

During the knowledge I have about the existing technology in Indonesia may still lag far, but little by little, Indonesia is pursuing entrainment is by making the MRT in Jakarta in collaboration with a Japanese company. In addition to the infrastructure systems that I learned during the program and comparison of my country today is very different, maybe a system in Indonesia should be able to learn a lot of details that are used by the Japanese state in order to make the technology used by the Japanese.

In the program I learned about the system and see the estate on the ground and allowed to ask for things you want to know in RTRI, PWRI, Bureau of Sewerage Tokyo Metropolitan Government and the National Institute for Environmental Studies. I wanted to make the same technology in my country with the system gradually and prepare to be able to place research in the stage. I believe in the future of Indonesia can achieve the technology that has been applied by developed countries such as in Japan, because we have a nation that is ready to compete and learn for the betterment of the nation.

I am very happy and amazing culture that belongs to the country of Japan with a dance that I wanted to learn and games that load I have a passion to play it, as I get to my take home to Indonesia, I often play it at home and I think is able to practice concentration I at one point. I was surprised when one of the game Thailand we have the same in Indonesia, we call "long dragon snakes" but this is very unique and we played together at the end of the game. I am very happy to learn the culture of Japan and Thailand during the program.

Astryd Viandila Dahlan (Astryd)

"Dreams do come true, if only we wish hard enough. You can have anything in life if you will sacrifice everything else for it" - J.M. Barrie, Peter Pan

One of my wishes or my dreams is to go to Japan. And here I was in Tokyo. Together with the delegate from Indonesia, we came to Japan for the ASCENT 5th program. ASCENT 5th program is organized by SAGE (Student Association for Global Exchange) in Tokyo Tech. The theme of this program is



"Urbanization: Draw the future with your hands". Why I join this program? Because Japan (the reason I explain in the first) and the theme is in line with my interests.

ASCENT 5th program held for 9 days. This program gave me new friends, new knowledge and new experience to me. From this program, I had new friends from Japan and Thailand. And also I got much new knowledge from this program. From lecture given by Tokyo Tech's professors, I learned about how to make good presentation and about new knowledge for me. From company visit, I learned the implementation of what we got in class. We went to Public Works Research Institute (PWRI), Railway Technical Research Institute (RTRI), National Institute for Environmental Studies (NIES), and Shibaura Sewage Plant. Some company that we visited is in line with my major and another company was new to me. And also I learned new thing from laboratorium visit. Although not all laboratorium I visited, I learned new thing and there are many students from Indonesia in those laboratorium.

Besides that, I learned about communication with people who have different culture. Example, Japanese people really appreciate the time (on time in everything) it's very different with Indonesia people. But we learn how to appreciate time and try to be on time.

My memorable experiences to stay in Tokyo are how expensive to live in Tokyo (It's very different with my country), for me Tokyo is one of safe city in the world, I was afraid to look many people passing by in the station and Tokyo is very high technology. Even though I can't see Sakura but it was very fun to spend my day with all of you.

Imania Eka Diyanti (Imania)

This ASCENT program was really a mesmerizing experience for me, since it taught me a lot of things I could only get through factual observation and involvement. Not only valuable lessons from the official learning activities such as lectures and company/laboratory visit, but also remarkable knowledge about basic life and social culture in Japan.

In accordance to the 'urbanization' theme, I learned much about transportation system and waste management in Japan through lectures and company/laboratory visit, particularly the latest technology applied and how they designed to deal with existing/future problems by means of researches. I also acquired a lot, especially things related to management issues of both system, from real-life practices. For instance, I learned about how many main categories of waste separation were introduced in Japan through observing garbage bins used in public places, how they maintained user-friendly implementation of convenient public transportation system through SUICA cards, how they assured the safety aspect for those in special needs (invalid people, pregnant women, etc.) by providing adequate instruments which specifically designed to accommodate them in public places, and so on.



Compared to Japan—where the transportation and waste management system were working extremely well, with all those compliance supports from the people—Indonesia still has so many problematical riddles to be answered. Our systems are facing a lot of challenges of various reasons, comprising of

economics point of view (i.e. budgetary, currency instability), social psychology and culture (i.e. public perspective, people's awareness, our basic value of life, our willingness to support and use public transport extendedly), also governmental trust issues (since there are still so many dirty business involved in every single level of administration in Indonesia). This is why, I am still trying my best through advanced learning of environmental engineering, hoping in the future I can contribute more to my society.

Furthermore, thanks to ASCENT (again and again), I really did achieve my personal purpose to be able to get a significant self-development in soft-skills via discussion and presentation sessions. Big warm regards to Prof. Tom Hope, for his precious guidance in increasing our performance and efficiency in public speech.

For the lovely SAGE committee, also all amiable participants from Japanese and Thailand, MEGA-HUGE THANKS, haha. The multicultural interactions I got from you, guys (through sharing, laugh, and joy), were beyond priceless. It was my first time to go to Japan, too, and after this program I knew, one had definitely never been enough!

Aldia Faulinasari Karmaputeri (Aldia)

ASCENT really gave me many amazing and memorable experiences. I learned so many things during this program, not only from the lectures and the laboratory tours, but also from discussing, talking, and sharing with the people there. From the lectures and the company/laboratory visiting, I learned about transportation and waste management system in Japan. The public transportation system there is designed to be convenient and managed orderly. They also concern a lot about safety aspect, considering the frequent earthquakes in this country. That is why most people in Japan prefer using public transportation to private vehicles.

About the waste management system, Japan also has more sophisticated technology and ordered system than my country, Indonesia. The waste has been separated from the households, so the management and the treatment of the waste will be much easier and more efficient. The incinerators are designed to generate less pollution, and some of the waste can be recycled into valuable things or converted into energy. For the waste water treatment, they use different system with my country, and the outcomes can be recycled and used for many activities, even after treated with advanced technology, it is actually safe to drink.

Comparing to Japan, the transportation and waste system in Indonesia still has many problems due to many reasons, such as budget limitation, people's perspective, and weak regulation. Transportation and waste system are still being the major problems in my country, and it will take a long time to fix it. Through the discussion, I also knew that Indonesia and Thailand turns out to have the same problem regarding environmental and transportation issues. In the future, I want to keep developing technology about environmental management system and bring something useful to my country. I hope I can contribute to the environment and the society among me.



I also learned about many other things beside from the lectures and the company/labs visiting. From the cultural exchange, I enjoyed all the performances and quite surprised that Indonesian and Thai have the same traditional game. I learned about Thai and Japanese culture through this cultural exchange. We also got a special lecture from Professor Mr. Hope. We were taught how to make a good presentation and become a good presenter that is so useful for us.

It was my first time to go to Japan, and I am

interested in knowing more about this country, either about its culture, tradition, language, and many more. During this program, I learned about how to live a life in Japan. They really respect time and rules, which is pretty different with most Indonesian people. Besides, they are so friendly and nice. I thank SAGE team a lot for holding this program really well and making this event becomes fun yet useful for us. ☺

Mochammad Dikra Prasetya (Dikra)

This was the first time for me coming to Japan, and it was awesome! At first I thought everyday will be a very-very busy day, and it was, but in a fun way. I learnt many things through the lectures, discussions, laboratory visits, and also the fun activities.

Mainly I learnt about issues relating to urban city, specifically about environment and transportation, which I never known before. I just knew at that time that tackling environment problem sooner is a big investment a country. The problem grow almost exponentially that we should start make an effort to handle it as soon as possible. From the lectures, I also found out that it is very possible to make use of wastes for good purposes, also possibly making profit. I realized that my country, Indonesia, really lacks of waste management. A straight-forward landfill that is common here is not solving any problem, but just postponing and invoking further issues. But at the same time that means currently Indonesia have a lot of waste resources that is available to use. The government should take an advantage from it, someone should. I also believe that in the future wastes will be a great resources for energy solution.

Beside from the serious activities, I also learnt many things at the fun time. We explore a lot of places in Tokyo. I saw many new things. I realize there are so many weird things (at least what I thought is weird) that are common in Japan, and surely, there are many common things that are weird in Japan! However it is very fun though to learn more about trivia things, such as slang language, "dark" places, and many more. The best time to digging other's cultures is when we hanging out together, especially when we started to discuss random things. Learning other's culture is a very great experience.

From the program I also inspired to do some things that I haven't thought it seriously before. Firstly, I am inspired to advance my study to gain more knowledge and give more impact to society. I learnt so many new interesting things there and met inspiring people. I realized my major, Informatics, could take a big role to solve things including the issues that were discussed in the sessions. Secondly, I also think that Japan has many interesting cultures and I want to know more. Maybe not just Japan, but other countries also. I believe exposing ourselves to other cultures and their home country issues are really an eye-opening opportunity and invaluable experiences.



I am glad that I were part of this program and really hoped next year this program would be conducted again with more fun and more knowledge to share. I had fun, and thankfully I made new great friends! Thanks ASCENT.

Putranegara Riauwindu (Putra)

Introduction

5th Asian Student Collaboration Encouragement on Technology Program 2014 is an initiative program conducted by Tokyo Institute of Technology (TIT) that aims to create and strengthen the network between students in Asia Pasific region. Participants are expected to learn and discuss something during the program to hopefully bring back the knowledge acquired to their own respective country. At

the first time I was informed that I passed the selection process I was so happy because I thought that I wouldn't pass the selection process. I finally represented my campus, Institut Teknologi Bandung, with my other 5 friends to go to Japan to attend the 10 days 5th ASCENT program.



Program Activities

5th ASCENT program covers several interesting activities that include guest lecture from TIT, Laboratory and Company Visit, Group Discussion, Sightseeing, and welcoming & farewell party from the committee. We visited several companies for example National Institute for Environmental Studies (NIES), Railway Technical Research Institute (RTRI), Shibaura Sewage Plant, and Public Work Research Institute (PWRI) to learn about how Tokyo and Japan handle its urbanization problem through technology implementation. We also had a chance to visit several Tokyo Insitute of Technology laboratories that related to our topic of discussion which is urbanization technology. We visited Hanaoka laboratory, Yai laboratory, Hinode laboratory, Yasuoka laboratory, Tsuge laboratory, Tanji laboratory, and Yoshikawa laboratory to learn about how Tokyo Institute of Technology deals with the current urbanization problem on waste and transportation not only in Japan but also the entire world. It was really interesting to know that Japan, in this case TIT, is actually trying to transfer their technology on urbanization to the other developing country to ease their own problem on urbanization.

Program Takeaway

I personally took a lot of takeaway from this program both from technical aspect and non technical aspect. From technical aspect, this program really opened my eyes that through implementation of suitable technology we can actually deal with the neverending problem on urbanization in our own country. Beside technical aspect I also had the opportunity to meet with the region`s brightest students and that would really be my most precious takeaway from this program. To sum up, ASCENT is a really beneficial program that is very unlikely to be missed by students in region that able to connect the region`s brightest student through collaboration encouragement on technology.

Listianing Widiastuti (Listi)

My name is Listianing Widiastuti but you can casually call me Listi. I am a bachelor student at Department of Regional and City Planning Institute of Technology Bandung (ITB). I am fortunate enough to get selected as one of the participants to join the 5th ASCENT program held by SAGE Institute of Technology Tokyo. I didn't get selected through in the first place; I was put up in the waiting list instead. That's why I was incredibly shocked but happy at the same time when I received the notification of acceptance from Leo (the chairman) by email. The reason why I join this program is mainly driven by my strong determination to have at least one global exchange experience during my study; and also because of the given theme of the program is very related to my field major I'm studying in. The theme of the 5th ASCENT this year is "Urbanization" focusing in waste and transportation management system.

I've finally made it to Japan, that's my first thought when my plane landed off. I remember the excitement I had during my stay in Japan as if everything were new (well, it is indeed) to me. M first impression to this program is: We're all indeed living in a small world. I can say this because during the cultural exchange schedule on the first day, I met Toru who surprisingly is befriended with one of my friends when he went to Indonesia last summer. And also when we're having cultural exchange party, we're all quite surprised when Thailand students gave the same performance of traditional games as Indonesian students did!

The following days are packed with lectures, institutional and laboratory visit to enrich our knowledge

for the Final Project. We are given chance and opportunity to visit National Institute of Environmental Studies, Public Works Research Institute, Railway Technical Research Institute, and Bureau of Sewerage Tokyo and also to some labs at Tokyo Tech. We also have some wonderful lectures from Prof. Yoshikawa about the research and development on waste management and Prof Tom Hope for giving tips and tricks to make a good, effective and attention-grabber presentation.

The day of main project's presentation has finally come. Our presentation is open for everyone to come and we are all touched but relieved at the same to see the number of audiences who come to see our presentation. Every group presents their project confidently about the concept of ideal city. Using their creativity, the concepts are born to solve the problems in the city so they can be livable ideally for the society. Some of them are so realistic to be implemented but the rests are just beyond realistic. After we're done with the presentation, we have the closing ceremony and we are given the certificate by Leo as the token of completion and appreciation for our participation in this program. Later in the evening, we have another exchange party but this time, it is open for public to come.



We've finally arrived to the last day of the program. Our last day is all about fun, taking the best advantages we can for our last moments altogether. We all have the best laughter and we end the day in tears and taking photographs of everyone, because we don't really want this program to end. After all, I'd like to thank everyone for sharing every moments, learnings, and friendship during this program. And I do hope that we can always keep in touch to keep our friendship forever strong!

Photo Album

Photo Album

DAY1







Photo Album

DAY2
















Photo Album

DAY3



















Photo Album

DAY4















Photo Album



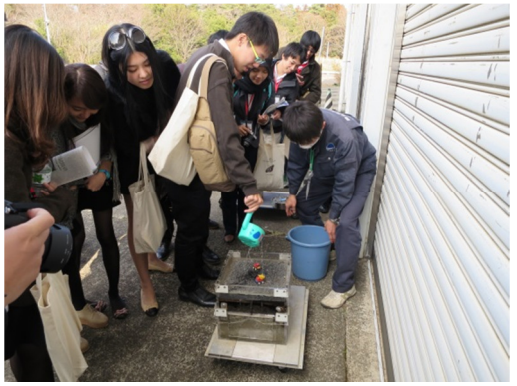





Photo Album

DAY5





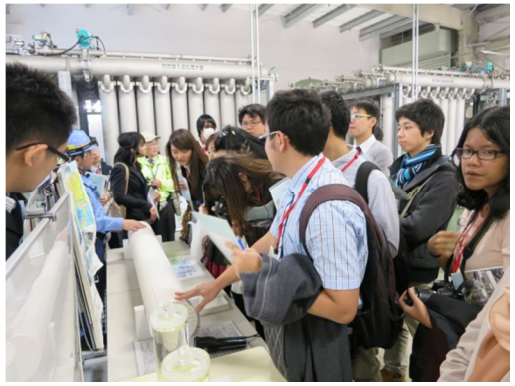










Photo Album

DAY6

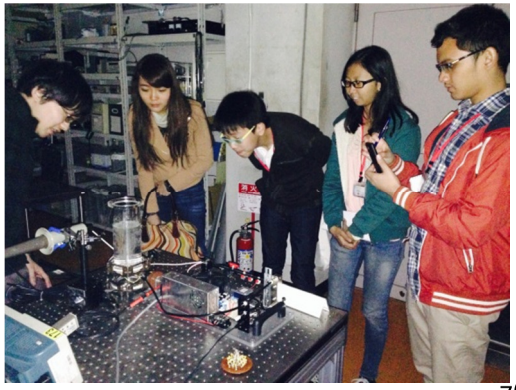












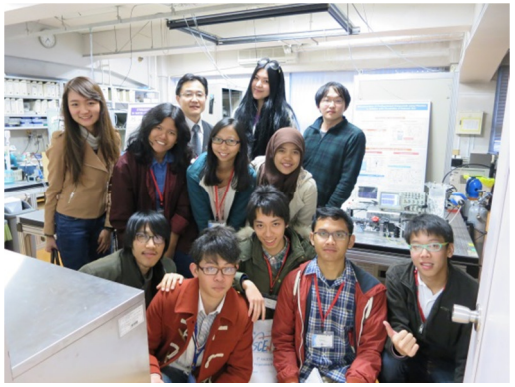


Photo Album

DAY7

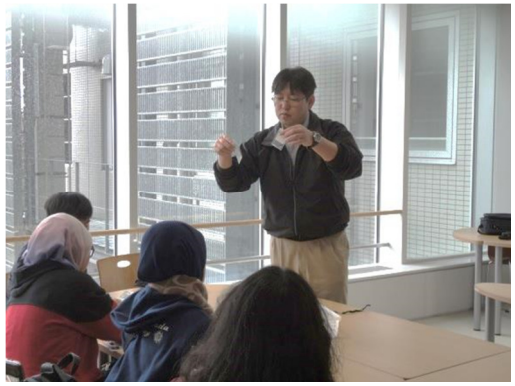












Photo Album

DAY8

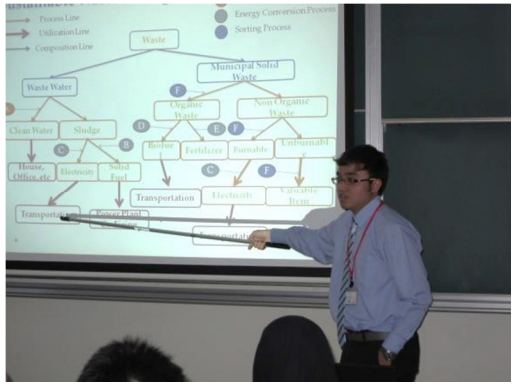


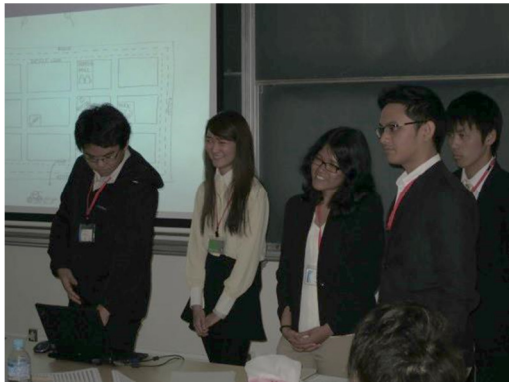














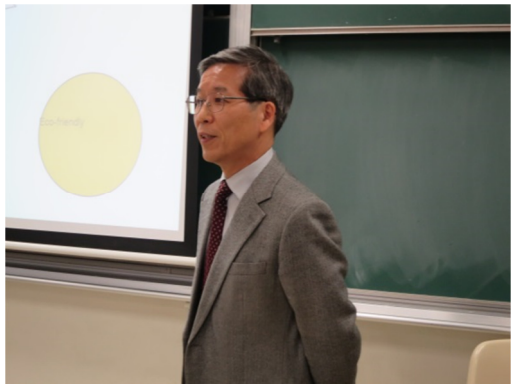








Photo Album








Photo Album

DAY9









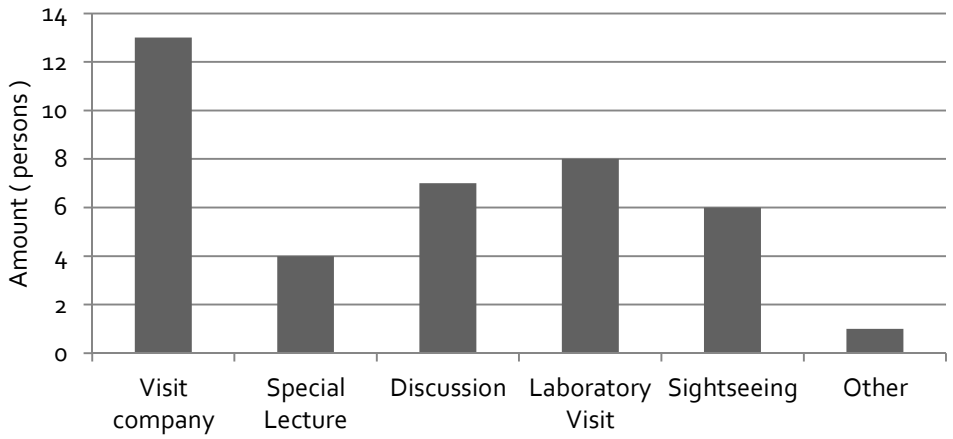


Appendix

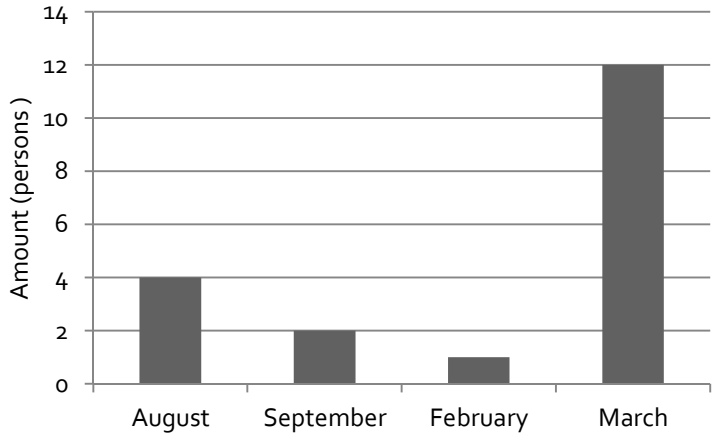
Summary of Questionnaires

【Before program】

1. Which program are you most interested in?



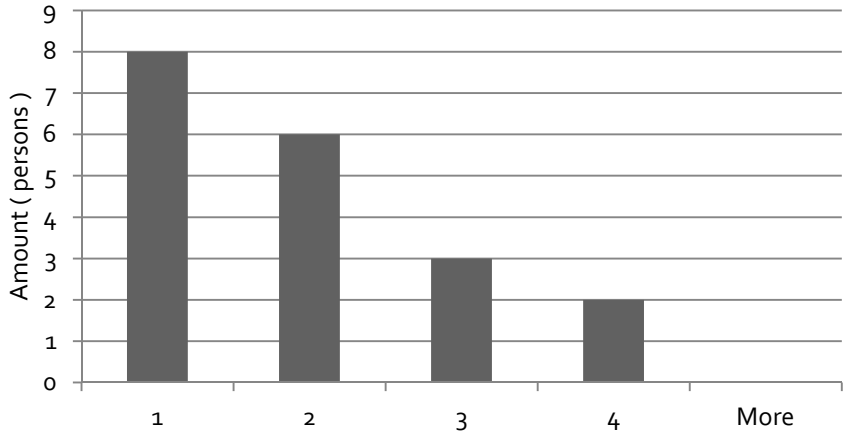
2. How do you think the dates of ASCENT? When do you hope ASCENT is held?



3. How do you think a chance of exchanging overseas students (ex. Studying abroad, Study program overseas)?

1. I have been overseas for study……**5**
    - UK (2), Thailand (1), USA (1), Indonesia (1)
2. I want to study abroad or attend program and I've scheduled where I'll go….**1**
    - UK (1)
3. I want to study abroad, but I've not decided anything yet…….**10**
    - USA (3), UK (3), Japan (3), South Korea (1), Germany (1), Netherlands (1)
4. I'm not interested in studying abroad or attend international program……**0**

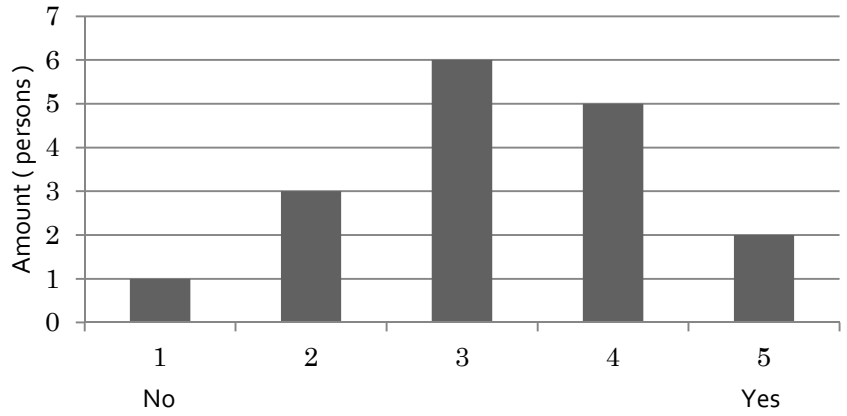
4. How many times have you ever joined international exchange programs or studying abroad program?



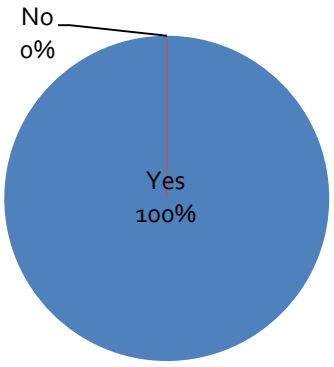
5. (If you have joined any international programs,) what kind of program have you joined?

Model United Nation (1), AYSEAS (1), AISEC (1), ASEAN Student Cultural Exchange Program (1), AFS in US, Exchange program in China (1), Religious international program with IFES, and EARK(East Asia Religious Conference), Engineering Program (1), Cultural Exchange Program (1), Science Forum (1), AOTULE (1)

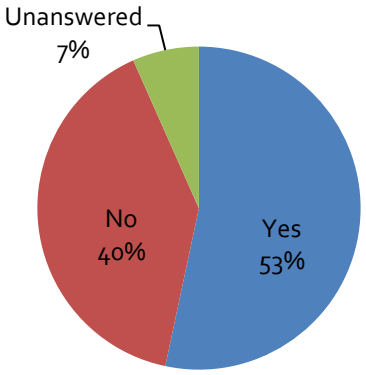
6. Are you confident about your English skill?



7. Are you looking for the chance speaking English?

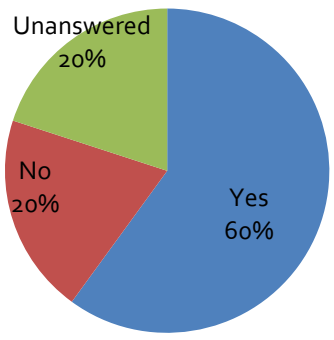


8. **(For foreign students,) Are you interested in working for Japanese Company?**

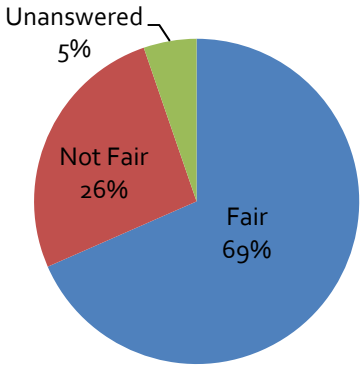


- Toshiba(1), SONY(1), Transportation organization(1), Automobile or Electronic(1), Bangkok(1), Water management(1)

9. (For Tokyo-tech students.) Are you interested in working overseas?

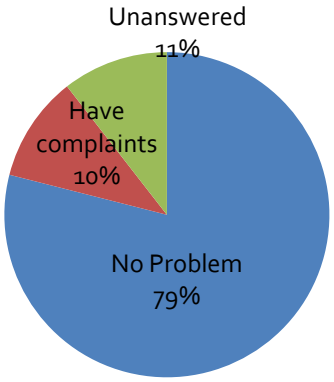


10. How do you think the information from SAGE before arriving here? Did you want to know more information?



- Let us know more quickly
- Train between hotel and the airport
- More details about food, hotel, and scope of study
- The history of SAGE. What programs are organized through a year? What is the main goal of ASCENT?
- The detail possibilities of scholarship funds

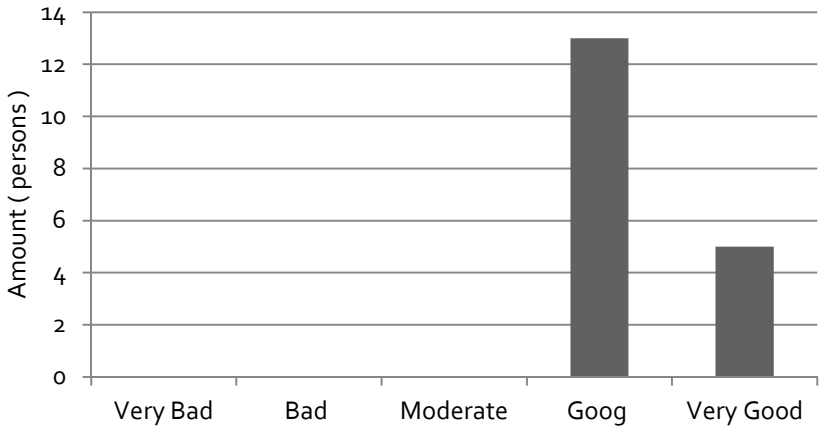
11. Do you have any opinions about the selection of 5th ASCENT? (We did it by essay screening and interview through Skype this time)



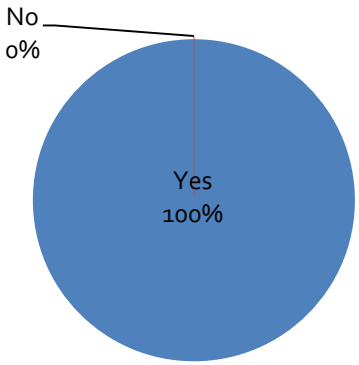
- More nationalities
- Skype unstable signal

【After program】

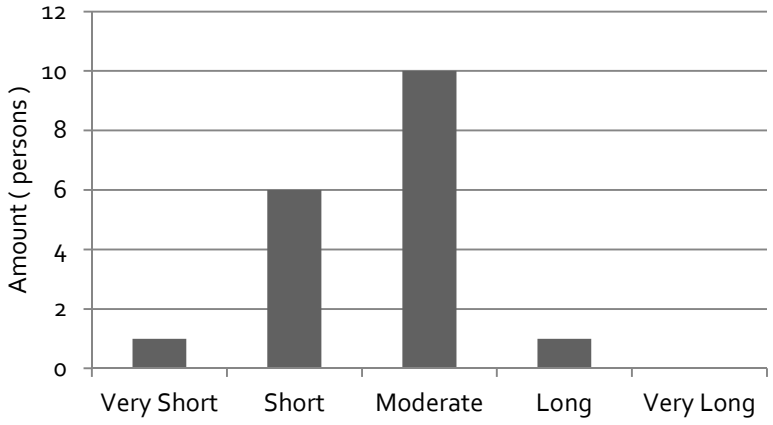
1. How was ASCENT?



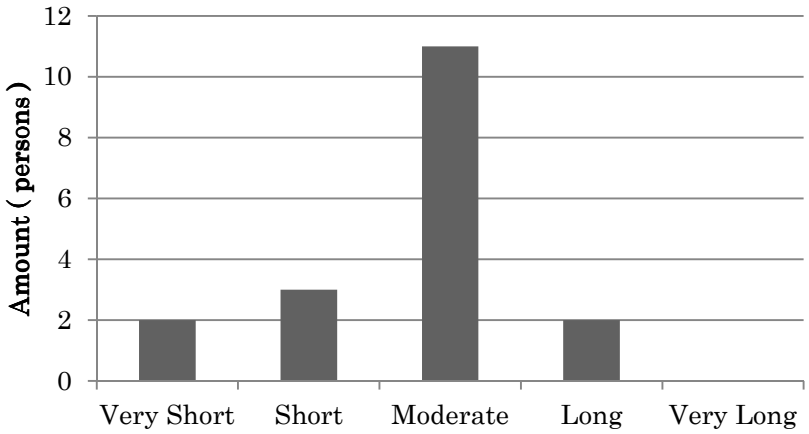
2. Did you have a good experience?



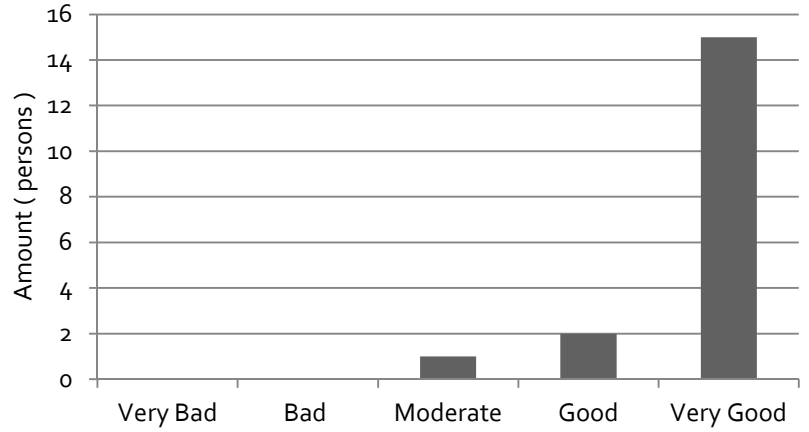
3. How do you think about a period of ASCENT program?



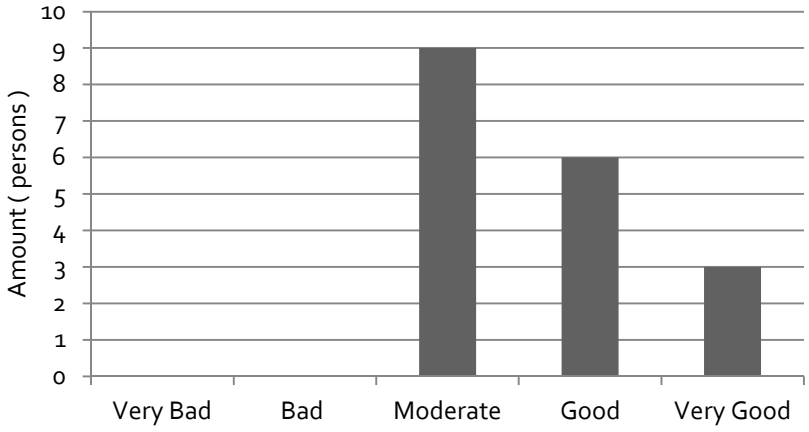
4. How do you think about a period of discussion?



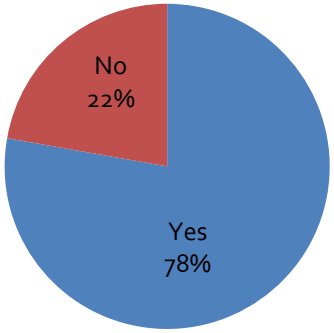
5. How was Special lecture by Prof. Tom Hope about Presentation?



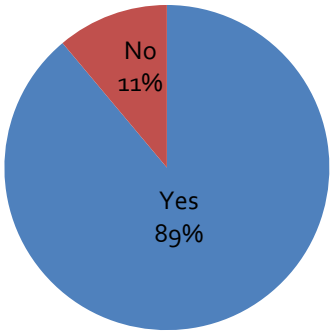
6. How do you think about Mini project?



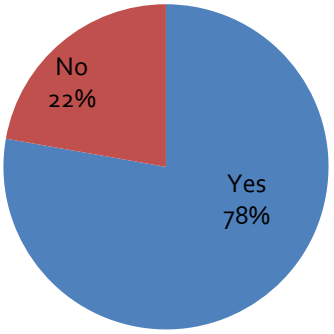
7. Do you want to participate in ASCENT again?



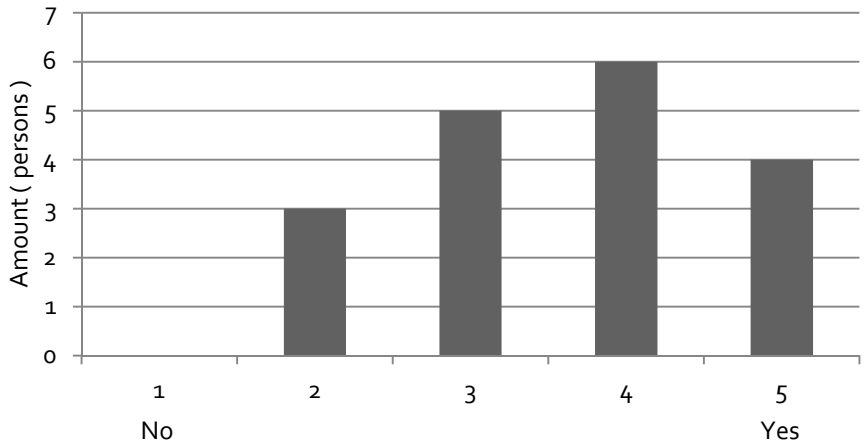
8. Did you achieve your purpose?



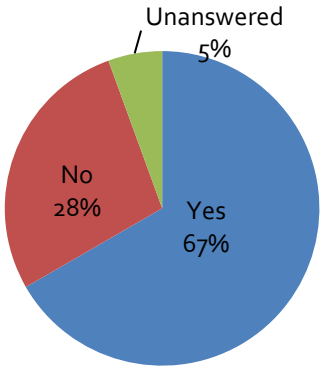
9. Do you think that your English skill was improved through 5th ASCENT?



10. Are you confident about your English skill?

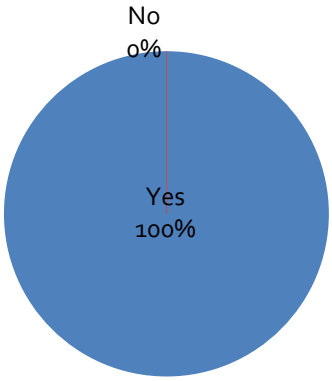


11. Did you become interested in studying abroad through 5th ASCENT?

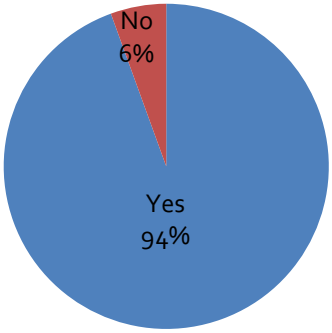


- Japan (6), USA (2), Somewhere in Asia (2), Korea (1), Europe (1)

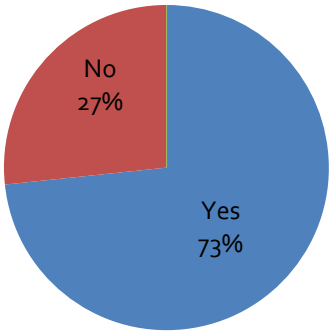
12. Do you want to take part in the chance of speaking English?



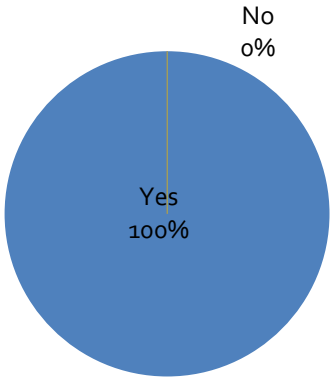
13. Do you want to take part in overseas programs?



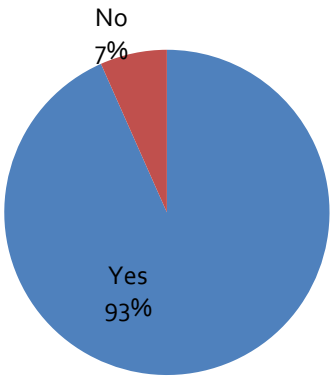
14. (For foreign students,) are you interested in working in Japanese Company?



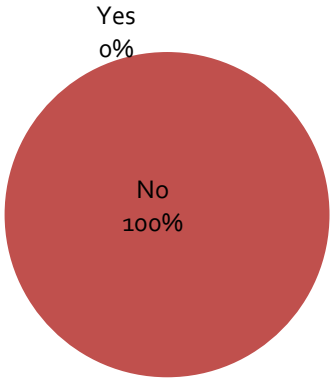
15. (For Tokyo-tech students,) are you interested in working abroad?



16. (For foreign students,) could you cooperate with ASCENT committee for 6th ASCENT by advertising and selection?



17. (For Tokyo-tech students,) are you interested in joining SAGE? Shall we make a good event together?



18. If you have some comments, please write down here.

Omitted Below.

Thank you for all of your comments! We've read them thoroughly.

SAGE staff's comments



As an organizer, it was great pleasure to see everyone's happy faces. 5th ASCENT was just a couple week, but I hope ASCENTers will keep in touch. Thanks for every corporation!!

Fumika YAMAGUCHI

Thank you all the 5th ASCENTers!! Each day and each moment is now my invaluable memories. I cannot remind the 10days without tears! Through immersing yourself into Japan for 10 days (or more), I'm pretty happy if you not only enjoyed your stay but learnt and felt the difference between both countries about cultures, transportation systems or so. See you around:)

Leo HIRAMOTO





Terima kasih! ขอบคุณค่ะ! ありがとう! I really enjoyed 5th ASCENT! Thanks all for your participation, and big thanks for your great efforts to other SAGE staffs!! Next year will be my last one and I hope we can collaborate more, letting the program be awesome!

Chieri YABU

It's been a long time, Hi, everyone! Thank to your cooperation, ASCENT 2014 was the wonderful program for all participants and staffs. As one SAGE staff member, I experienced a lot of things and enjoyed all time with you. Thank you so much!

Riho YAHAGI





Thank you for participating 5th ASCENT program. I believe we could have a good time with all participatins and staffs. I am sure to make the program better with you.

Yuki TAOKA

Big thanks for everyone. As your Senpai, I'd like to tell you this sentence, "This encounter was memorable, and will be more special in the future." Keep in touch for a long time! We will meet up again and enjoy chatting about such a special experience:)

Tomoki ISHIMARU







5th Asian Students Collaboration
Encouragement Program in Technology