



**Thailand Study Tour  
on HVAC&R Technology 2009  
Report**



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## 1. Forewords

### **Message from the Advisor**

On behalf of the study tour participants, I would like to express sincere thanks to the ASHRAE Thailand Chapter, Hong Kong Chapter, and all related organizations and people for their kind support.

This year is the fourth time such a study tour is organized. The outcome is very fruitful and rewarding. The students from Hong Kong have chance to visit two universities in Thailand (Chulalongkorn University and Kasetsart University), the New Bangkok Government Center, the Department of Alternative Energy Development and Efficiency (DEDE), EEC Engineering Network Co., Ltd., and three manufacturers of HVAC&R products (Mitsubishi Electric Consumer Products (Thailand), Eastern Polymer International (Aeroflex) and Uni-Aire Corporation Co., Ltd.).

The study tour has enabled our Hong Kong students to meet with the student representatives and ASHRAE delegates from Thailand, Indonesia, Philippines, Malaysia, Singapore and Taiwan. They were also able to meet and discuss with the ASHRAE President (Mr. Gordon Holness) and other ASHRAE Headquarters staff. The experience is very valuable and could expand their vision in regional and international affairs.

The ASHRAE Region XIII Chapters Regional Conference was held successfully and our students appreciated the technical seminars and social gatherings during the conference. The spirit of cultural exchange and friendship is clearly demonstrated at the social functions including the banquet dinner and farewell party. I believe the performance made by the Hong Kong students in front of some 200 attendants at the banquet dinner is interesting and remarkable.

The study tour not only provide opportunities for our students to learn technical matters and different cultures, but also offer an excellent platform for them to develop various skills including organization, communication, teamworking and performance. I hope that the spirit of the study tour will be continued and the participants will extend the findings and experience to benefit themselves, other students and our industry.

Dr. Sam C. M. Hui  
Study Tour Advisor  
ASHRAE Hong Kong Chapter



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Aeroflex International Factory at Rayong Province  
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Mr. Nirun Chayangsu (ASHRAE Thailand Chapter)

Ms. Siritip Harntaweewongsa (Green Building Designer)  
Mr. Karsten Holm (Danish Energy Management)

### 3. Executive Summary



Twelve students went for a 7-day Thailand Study Tour on HVAC&R Technology, which was jointly organized by the University of Hong Kong, the City University of Hong Kong, the Hong Kong Polytechnic University, the Hong Kong University of Science and Technology and Hong Kong Institute of Vocational Education, from 20<sup>th</sup> August to 26<sup>th</sup> August 2009 in this summer.

By joining this study tour, it was to enhance students' interests in HVAC&R technologies by talks, seminars and visits. This seven days study tour was a valuable experience for us to broaden our view by culture exchanging and engineering industry. In these seven days, we joined various activities such as ASHARE Regional XIII Chapters Regional Conference (CRC), factory visits. CRC allowed us to know more engineering field and how to become a professional engineer. The seminar is also focus on energy saving and green building. The factory visits can let us know more about manufacturing process. We are difficult to visit this type of factory in Hong Kong. So, this is a great chance for us learning in other countries.

In spite of acquiring engineering knowledge, the visits of the University and the Banquet Dinner also provided us an occasional opportunity to have academic and cultural exchange with students from other countries. These were additional earnings for us to establish friendship with each other in this trip.

This study tour provided a memorable experience to students as cultural exchange and engineering knowledge. We would like to thank for ASHRAE Hong Kong Chapters to support this enjoyable trip. I hope that it will be more students to have chances to participate and benefit from the activities jointly organized by ASHRAE and Hong Kong universities in the future.

Mr. Lam Chun Hon, Frankie  
Team Leader  
Thailand Study Tour 2009

## 4. Introduction

### Background

In August 2009, the ASHRAE Region XIII Chapters Regional Conference was held in Bangkok, Thailand. This study tour were arranged to allow the students in Hong Kong to attend the conference and to carry out technical and academic visits and exchanges. Successful study tours to Malaysia, Taiwan and Philippines were organized in 2006, 2007 and 2008 respectively.

### Objectives

The objectives of this study tour are:

- To study the culture and social-economic development of Thailand
- To enable the students to develop knowledge and skills in advanced HVAC&R technology, building environmental design and creative thinking
- To promote international cooperation, cultural exchange and mutual understanding in Asia

The participants of the study tour come from four student branches including City University of Hong Kong, The University of Hong Kong, The Hong Kong Polytechnic University and Hong Kong Institute of Vocational Education. Before having the study tour, students had to attend meetings for the preparation works. Through the meetings, students from different universities learnt the importance of teamwork and organization skills. During the study tours, attending professional engineering conferences, technical visits, company visits and sightseeing had broadened students' horizon. In addition, students were able to meet different engineering students from The Philippines, Taiwan, Thailand, Indonesia and Malaysia. Cultural values could be exchanged with different student chapters and a better understanding of Asian countries would be developed.

## 5. Itinerary of Thailand Study Tour 2009 on HVAC&R Technology

Duration: 20 August 2009 – 26 August 2009

Flight: Cathay Pacific (CX)

Hotel: Palazzo Hotel Bangkok

### **Day 1 20 Aug 2009 (Thu)**

Afternoon: Depart Hong Kong to Bangkok (CX751 1425/1625)

Evening: Welcome Party at Palazzo Hotel

### **Day 2 21 Aug 2009 (Fri)**

Morning: CRC Technical Seminars

Afternoon: Technical Visit - Mitsubishi Electric Consumer Products (Thailand)  
Factory at Muang, Chonburi Province

Evening: Banquet Dinner

### **Day 3 22 Aug 2009 (Sat)**

Morning: Technical Visit - Eastern Polymer International (Aeroflex)

Afternoon: Cultural visits (Sunday Market)

### **Day 4 23 Aug 2009 (Sun)**

Morning: Sightseeing

Afternoon: Sightseeing

### **Day 5 24 Aug 2009 (Mon)**

Morning: Visit to Chulalongkorn University (CU)

Afternoon: Visit to Kasetsart University (KU) and KU Faculty of Economics

### **Day 6 25 Aug 2008 (Tue)**

Morning: Visit to New Bangkok Government Center

Afternoon: Technical Visit - Display Center and Training Division, Department of  
Alternative Energy Development and Efficiency (DEDE)

### **Day 7 26 Aug 2008 (Wed)**

Morning: Visit to EEC Engineering Network Co.Ltd.

Afternoon: Technical Visit - Uni-Aire Corporation Co. Ltd.

Depart Bangkok to Hong Kong (CX702 1840/2235)

## 6. ASHRAE Chapter Regional Conference (CRC)

### **Introduction**

ASHRAE region XIII 12<sup>th</sup> Chapters Regional Conference (CRC) was organized on Day 2 (22<sup>nd</sup>, August 2009) of the study tour. There was a technical seminar and two topics were introduced. They were “Green Building, LEED, and the (Proposed) Standard ASHRAE 189.1” by Thomas M. Lawrence PhD., P.E. LEED-AP and “Case study –



The New Government Center Project, Bangkok” by Kecha Thirakomen. A banquet dinner was held on that night to all the participants in the CRC.

### **Speech 1:** Green Building, LEED, and the (Proposed) Standard ASHRAE 189.1

(By Mr. Thomas M. Lawrence PhD.)

Sustainability is the providing of the needs of the present without detracting from the ability to fulfill the needs of the future. Green building design is one of the ways to achieve sustainability. The speech started with by comparing the economic mitigation potential in various sectors in 2030. It then



reviewed the Leadership in Energy and Environmental Design (LEED) programs for green buildings and overviewed the proposed ASHRAE Standard 189.1 for High-Performance Green Buildings. First of all, it introduced the green building rating system by giving the general information of LEED. Five categories of LEED were introduced. The speaker then explained the ASHRAE Standard 189.1. It is a standard for the design of high-performance green buildings except low-rise residential buildings. Lastly, the speech ended with the comparison between the LEED and ASHRAE Standard 189.1. It is found that it should be transformed into more international applicability and use.



**Speech 2:** Case Study – The New Government Center Project, Bangkok

(By Mr. Kecha Thirakomen)

The new Bangkok Government Center is a new civil-service complex, which provides office space for the state enterprises. The speech started with introducing the outlook and the surroundings of the government center. Then, the design criteria, design concept and major cooling load of HVAC design were discussed. The architectural design of the building helps reducing the cooling load and achieving thermal comfort for the users, for examples, wall and roof with insulation, lighting system and inclined air flow windows. The speaker also explained the design concept of demand control ventilation, infiltration control and terminal concept in the building. After that, he introduced the district cooling system of this building by using schematic diagram, section drawings and photos. And then the building management system was introduced and it was a web-based technology. At last, the speaker presented the co-generation system of the chiller plants and its benefits. The speech ended with a number of site photos and also a short conclusion which highlighted the features of the HVAC design of the building.



## 7. University Visits

### 7.1 Chulalongkorn University



**Chulalongkorn University** (Thai: จุฬาลงกรณ์มหาวิทยาลัย) is the oldest university in Thailand and has been long-time considered the country's most prestigious university. It now has eighteen faculties and a number of schools and institutes. Regarded as the best and most selective university of Thailand, it normally attracts top students around the country. It is named after King Chulalongkorn (Rama V), and was established by his son and successor King Vajiravudh (Rama VI) in 1917 by combining the Royal Pages School and the College of Medicine.



During the years 1973-1977 Princess Maha Chakri Sirindhorn was a student at the University, becoming the first member of the Thai Royal Family to graduate from a Thai university. Prior to that, Thai royals had always studied abroad.

The Faculty of Engineering, Chulalongkorn University first established as the Engineering School ( Yantara Suksa School ) of King Chulalongkorn's Civil Service College by King Vajiravudh on June 1, 1913. Later the Civil Service College and the Medical College, Ministry of Educations, were amalgamated by a royal decree into Chulalongkorn University, and the Engineering School became the Faculty of Engineering.



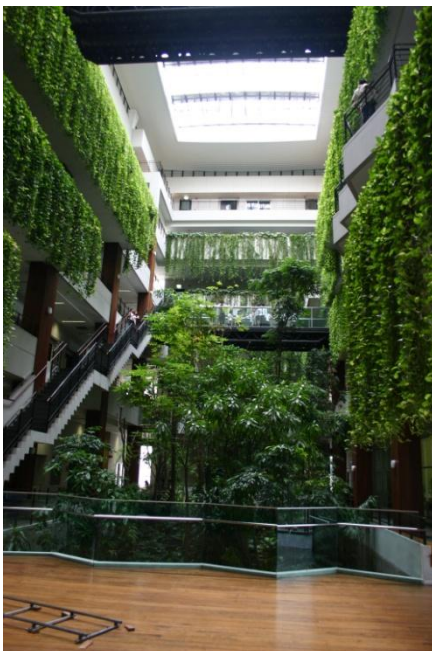
In 1935, the Faculty of Engineering established three separate departments to foster growth and advance various disciplines of engineering. Today, there are 12 departments offering various degrees in bachelor, master and doctorate level.

## 7.2 Kasetsart University



**Kasetsart University** (Thai: มหาวิทยาลัยเกษตรศาสตร์,) is a public university in Thailand and is considered as one of the most prestigious universities in the country. It is also the first agricultural university and the third oldest university in Thailand. The university was established on February 2, 1943, with the primary aims in promoting subjects related to agricultural science. To the present, Kasetsart University has revised its curricula and expanded the subject areas to cover science, arts, social sciences, humanities, education, engineering, and architecture. Recently, the university made an attempt to include medicine and health science. Kasetsart University has seven campuses throughout Thailand, where its main and flagship campus is at Bang Khen, Bangkok. The total enrollment at Kasetsart University is over 45,000, placing it among the top largest universities in Thailand.

The Faculty of Engineering, KU, offers International Degree Programs which emphasis on creative thinking, research and analysis in engineering disciplines, leading to an advanced research capability and highly qualified and innovative engineering minds to serve the rapidly changing world.



The building of Faculty of Economics is a energy saving building. There are lots of green plant inside the building. It aims to reduce the heat inside the building. Besides, day lighting is used so it can reduce the electricity consumption during the day time. Futhermore, Natural ventilation is provided so as to reduce energy.



## 8. Technical Visits

### 8.1 *Mitsubishi Electric Consumer Products (Thailand)*

On November 27, 1989, Melco Consumer Products (Thailand) Co., Ltd. was established as a joint venture between Mitsubishi Electric Corporation, Siam Cement Plc., and Kang Yong Electric Plc. Its initial registered capital was 200 million baht. Its factory, located at Bangna-Trad Highway KM. 20, commenced production on July 23, 1990 with 200 employees.



As Mitsubishi Electric air-conditioners have earned popularity among local and overseas users, product demand has increased accordingly. Realizing the need to relocate, the company decided to set up a new factory at Amata Nakorn Industrial Estate, Chonburi Province in order to boost its production capacity. Construction of the new factory began in June 1996. The company was officially renamed Mitsubishi Electric Consumer Products (Thailand) Co., Ltd.(MCP) on September 1, 1997, the same day the new factory commenced production.



Once again in 1999, our registered capital was increased to 1,200 million baht to increase production capacity to keep up with world demand. Two years later, Mitsubishi Electric's shareholders have changed from Mitsubishi Electric Corporation, Kang Yong Electric Plc. and Siam Cement Plc. to Mitsubishi Electric Corporation, Kang Yong Electric Plc. and Siam Compressor Industry Plc.



Since November, 2006, MCP's second factory has been established next to the first factory. This expanding makes MCP become the biggest air-conditioner production base of Mitsubishi Electric with over 1,000 high quality employees.



***Mission of the company***

1. To unify the strength of all employees with the spirit of mutual trust and respect.
2. To become professional in each one's field through mind enhancing and skill training.
3. To be No.1 of the world with great effort, determination and persistency.

After the description of the background of the company, we had a chance to visit the air-conditioning manufacturing plant. It was rare to access to the real working place and looked through the whole the manufacture process. With their innovative and advanced technology, the company aims to produce unrivalled, first-class products in accordance with their Quality Policy:

1. Best quality in process
2. Zero defect in market
3. Enhance customer satisfaction
4. Comply legal and Standard

Inside the air-conditioner, there were many sections and each section had its own working process. For example, packing, assembling, welding and testing. After we looked through the process, we had a better understanding about the real process and gained the benefits on it. The workers were very careful to handle the welding process to ensure no any leakages and missing joining parts.

We also have a chance to see quality assurance in the factory. They are produced under strict quality measures that comply with international standards of quality. Their quality assurance measures are recognized by numerous certifications from well-known institutes worldwide. Special control and operational functions are installed in their products for added convenience and environmental protection.



## 8.2 Eastern Polymer International (Aeroflex)

AEROFLEX manufactures closed cell tube and sheet insulation is a flexible, closed cell and lightweight elastomeric material designed for insulating liquid cooling and heating lines. The closed cell structure of Aeroflex provides many advantages over most rigid insulations for cooling and heating lines, such as:

1. Moisture and vapor resistance without using additional vapor barriers.
2. Stable thermal conductivity (K. value) during service, due to its dense surface skins and closed cell characteristics.
3. Flexibility which makes installation work easy and neat.
4. Outstanding ultraviolet and weather resistance.

It is an ideal insulation for frost control on cold water plumbing. It prevents heat gain and condensation problems on chilled water and refrigerant pipelines, and it also prevents heat loss from hot water plumbing, liquid and dual temperature piping.

### Products

#### ● Aeroflex Tube Insulation ● ● ● ●



**AEROFLEX** closed cell tube insulation is easily installed to pipes or tubing. The factory-applied coating of talcum powder on the thick and smooth inner skin helps speed up preassembly lines. When applied to existing lines tubing should be slit length-wise and snapped into place. Slitting can be done on the job easily with razors, blades, knives, or shears. Cut edges and joints can be sealed with AeroSeal Adhesive (neoprene base contact cement).

#### ● Aeroflex Standard Sheet ( S-series ) ● ●



The standard sheet is available in size of 36" x 48" with a wall thickness from 1/8" to 2" and 0.5mx2m with a wall thickness from 3mm upto 50mm. It prevents heat loss and condensation on large pipelines, tanks, chillers, air ducts, and other irregular shaped vessels.

#### ● Aeroflex Pre-cut Sheet Insulation (P-series) ● ●



The pre-cut sheets are ready-cut in sizes to suit large pipe sizes ranging from 4" IPS upwards (1/2" to 2" wall thickness are available in 48" length).

The pre-cut series makes fabrication easier and more economical because wastage is eliminated. Moreover, AEROFLEX precut sheet is manufactured to nominal thickness with smooth and dense skins on both surfaces. In addition to excellent insulating properties, the pre-cut sheet also has greater resistance to water vapor penetration and water absorption.

● **Aeroflex Continuous Sheet Roll (SR-Series)** ● ●



**AEROFLEX** sheet insulations are also available in continuous roll form. Aeroflex continuous sheet rolls are available from 1/8" (3 mm) to 2" (50 mm) thickness, 48" (1, 220 mm) width x 13' to 100' length or 1,000mm width x 3 m to 30 m length. All insulating sheets are made from the same materials as Aeroflex tubing.

After the description of the background of the company, we had a chance to visit the rubber manufacturing plant. It was rare to access to the real working place and looked through the whole the manufacture process. The company is a quality product which has undergone careful control at every stage starting from raw materials to chemical and compounding testing. All these tests are conducted in modern laboratories equipped with sophisticated instruments. Control at every steps of processing to the final stage as a finished product requires precision control. These quality controls ensure that our products meet our customers' requirements and satisfaction. Moreover, constant research and development is conducted to ensure it is supplied as a high quality product at reasonable price.



### **8.3 New Bangkok Government Center Complex**

**The New Bangkok Government Center Complex** is a mega office building complex with construction area of 1 million m<sup>2</sup> or 1.4 million m<sup>2</sup> including road and landscape, and more than 0.6 million m<sup>2</sup> of air-conditioning space and 24 HR/365 days of indoor environmental control condition.



The site is located at Changwattana road, adjacent to Communication Authority of Thailand (CAT) head office. The land has 2 zones. Zone A of 160,000 m<sup>2</sup>, along Changwattana road. Zone B of 500,000 m<sup>2</sup>, and separated between the 2 zones by Supreme Command Head Quarter. Zone C is the provision for future recreations and support facilities.

The original master plan of 44 government office buildings in “Grid system” at 15 stories high was the start of critics. The critical weaknesses had provided new design opportunities.

#### ***Energy-efficiency Building***

The complex was designed as a prototype of high-performance energy-efficient buildings that consumes 20% less energy than other high quality buildings based on 3 main concepts:

- (1) Energy-efficient buildings with a closed-system design preventing heat and moisture penetration.
- (2) Temperature control system distributing cool air nightly for the coldness absorption by the buildings in order to ease the burden of the air conditioning system during the day.
- (3) Cool water production and storage system operating during night time which has lower production costs than the daytime operation.



### ***Co-generation system***

A joint system for the electricity and cool water generation similar to the system implemented at the Suvarnbhumi Airport.

The Co-Generation system uses natural gas (CNG) as the main energy source for electricity generation. The heat by-product is recycled as the energy source for producing cool water for the buildings. The system implementation also supports the national energy-saving policy by using natural gas resource which is economical and readily available domestically. Moreover, the system efficiently utilizes the natural gas and 80% of its by-product. The service providers of this system are the PTT Public Company Limited (PTT) and the Metropolitan Electricity Authority (MEA).

### ***Pond cooling***

Pond cooling the water pond acts as geothermal heat sink to the Energy Center. Water pond temperature is 28°C during day time, corresponding to normal ground temperature in Bangkok, with ground as geothermal heat sink. The water pond provide “Natural Cooling” source by using ground temperature, evaporation, and night sky radiation. By circulating the pond water to cool the absorption chillers at the Energy Center, the chillers will be run more efficiently than using cooling tower which can only provide 30-32°C cooling water. The water circulation will also create water feature around the building by gravity flow. Water discharges from energy center at 3.00 m head and circulates around building B and return at suction intake take almost 2 km. Volume of water pond is approximately 900,000 m<sup>3</sup>.



### ***True use of natural light***

True natural light is indirect natural light from ceiling. Area such as inner court, atrium, car parking and office perimeter should be able to depend on natural light only during day time. General office has been designed as open plan office with high ceiling of 2.7-3.30 m.



Ceiling is generally white color. Therefore, natural light will be promoted deep into the office space. Window, wall and ceiling have been designed with eye adaptation.

The interior wall along the inner court is rather transparent with large glass area, since there is no need to worry about solar heat gain like external window. Therefore, the office can make full use of natural light from the inner court.

### ***Chilled water tank***

Chilled water for individual fan coil or terminal unit will be stored in large chilled water tank under the inner court plaza.

Therefore, the tank will provide floor cooling effect to the plaza. The CWS+ concept allows chilled water supply temperature from the tank to individual fan coil or terminal unit to float at a certain limit, say 6-10 C. This floating simplifies construction of the tank and reduces the size of the tank. Remember that the individual fan coil or terminal unit is providing mainly sensible cooling.

#### 8.4 Uni-Aire Co. Ltd.

**Uni-Aire Co. Ltd.** - Air Conditioner UNI-Aire Corp." is a group of companies which is well known manufacturer and distributor of air-conditioners (including components of air-conditioner and refrigeration) for more than 31 years. Moreover they have obtained ISO 9001:2000 standards.



UNI-AIRE CORP. started manufacturing heat exchanger, either in D.X. (direct expansion) or water system. During the '70s, the air conditioners market in Thailand was dominated by American brand name such as York, Carrier, Cavinetor, G.E. At that time, the air conditioners were mostly for hotel or shopping center, and the demand for domestic air conditioners was very small. Uni-Aire Corp. gained some shares in the replacement parts of those American brand name products such as those replacements of coils or water cooled condenser, water chiller barrels.

In 1993, Uni-Aire Corp. developed a new line of universal type (floor and ceiling convertible) air conditioners with double direction air flow system which provides better air circulation, bigger air outlet, and thereby reduces the noise.

With the steady growth of the turnover, in 1988 Uni-Aire Corp. had moved to the present site in the suburbs of Bangkok. The facilities currently include 48,000 sq.m. of land area, 10,500 sq.m. production area, components warehouse 2,190 sq.m., finished products warehouse 4,000 sq.m.

The newly completed building is equipped with general office, marketing and sale office, production office, quality control office, calibration room and psychrometric calorimeter room.

For export, Uni-Aire has succeeded in all continents, with air conditioning systems operable in different climates from very cold climate in Canada and China to very warm climate in the Middle East and widely ranging climate in Australia.



After the description of the background of the company, we had a chance to visit the air-conditioning manufacturing plant. It was rare to access to the real working place and looked through the whole the manufacture process. However, the size and system of the factory is the same as Mitsubishi Electric Consumer Products (Thailand) factory. The factory is quite small and more process is mainly by man-made. They can still produce good products. The factory is also having a good quality assurance. They are produced under strict quality measures.



## 9. Sightseeing

### 9.1 *Chatuchak Weekend Market*

There are many markets in Bangkok, Chatuchak Weekend Market is still pretty much the undisputed king of them all. It is the largest market in Thailand, and largest of the world. It also calls JJ Market. The opening hours for the market are from 9.00am to 6.00pm on Saturday and Sunday, therefore it calls weekend market. It contains more than 15000shops and



stalls. Tourist must spend one day to travel round it. It is estimated that the market receives between 200,000 and 300,000 visitors each day.



Chatuchak always gets very hot and humid during the day, so we recommend you to go in the morning, it is most comfortable for shopping. The market offers a wide variety of products including household accessories, handicrafts, religious artifacts, art, antiques, books, music, clothes, food, plants and flowers etc... Chatuchak is also a particularly good place to buy all sorts of Thai handicrafts, the quality is high and keeps the prices low.



## 9.2 Grand Palace



There is one must-see sight that no visit to Bangkok would be complete without, it's the dazzling, spectacular Grand Palace, undoubtedly the city's most famous landmark.

Built in 1782 - and for 150 years the home of the Thai King, the Royal court and the administrative seat of government - the Grand Palace of Bangkok is a grand old dame indeed, that continues to have visitors in awe with its beautiful architecture and intricate detail, all of which is a proud salute to the creativity and craftsmanship of Thai people. The Palace is however still very much in use; as many royal rituals are performed here by the King every year. Other royal ceremonies celebrated here are coronations; royal funerals, marriages and state banquets. The Palace grounds also contain the offices and buildings of the Bureau of the Royal Household, the Office of the Private Secretary to the King and Royal Institute of Thailand. Today, the complex remains the spiritual heart of the Thai Kingdom.



## 10. Words from Delegates



“This study tour gives me an interesting experience. The schedule was tight and organized well. In this trip, we visit the Mitsubishi Electric Consumer Products Factory, Department of Alternative Energy Development and Efficiency and Eastern Polymer International which enhance me knowledge and interest in HVAC&R technologies. Besides, I am particularly impressed by the activities at the banquet dinner. It provided me a

chance that I can meet students from different southeast country and have fun with them.

Finally, I would like to thank ASHRAE Honk Kong Chapter for offering me such an invaluable chance to have study tour in the Thailand.”

**Lao Seak Hong, Billy (HKU)**

“I am happy that I can join this Thailand Study Tour. During the tour, the part that I enjoy most is culture exchange. I met many friends from other countries and I have learnt a lot from their sharing. In addition, we still have communication with those friends after the trip.

Moreover, the visits to Mitsubishi Electric Consumer Products (Thailand) Factory, UNI-Aire, and Eastern Polymer International (Aeroflex) provided me a basic knowledge of manufacturing, testing processes on air-conditioner and thermal insulation, which greatly enhances my interest in this aspect.

Finally, I would like to express my thanks to our advisor Dr. Sam Hui, our team leaders for the trip arrangements and special thanks the ASHRAE HK Chapter for the supports.”

**Lau Chun Chau, Benny (HKU)**





“This was my first time to join a study tour, I learned a lots and it was beyond my expectation. In this tour, I participated in technical seminar, factory visits and building visits, I gained a lot of knowledge about HVAC design, energy efficiency and green building development. Besides learning, I also enjoyed this tour a lot. The most memorable part was the banquet dinner because I met many new friends from different chapters. During the university visits, I could have a chance to communicate with Thai students and understood more about the engineering development in Thailand. Finally, I would like to express my sincere thanks to ASHRAE Hong Kong Chapter, Dr. Sam Hui and all the tour buddies for giving me this unforgettable tour!”

**Chan So Chun, Sue (HKU)**

“This study tour was a memorable and valuable trip for us as we could visit many factories and buildings and I gained lots of knowledge from the visits. Also, it was a great opportunity for us to attend the Chapter Regional Conference and make a lot of friends from other countries. Thanks for Hong Kong chapter and Dr. Sam Hui giving me a chance to join this study tour. I am glad to have the chance to join it. “

**Fung Chak Pan, Tommy (HKU)**



“It is my honor to join the Thailand study tour in this year. I am glad to learn from other countries and meet people here. It was an unforgettable and valuable tour which provided me a chance to participate in various kinds of activities and explore myself as well. Students met in the University were very kind and willing to communicate with us so that we know more about the culture from other country.”

**Lau Yi Sen, Eason (HKU)**



“In this trip, it was a good experience for me to visit the air-conditioning factory since I did not think that Thailand has this professional company before enjoying this tour. And after that I knew the biggest absorption chiller is in Thailand. Therefore, I start to be admire this country. Our itinerary arrangement for visiting was very compact and smooth, so that we could visit at most places. The students in the two Universities were very nice and talkative. I am surprised that these Universities are so big. One boy also told us a lot of special places for us to play in free activities. For the leisure time, we could go shopping and eat a lot of Thai food. All in all, seven days made me enjoy and learn a lot of things. And I also realize the characteristics and custom in Thailand.”

**Chan Yuk Ting, LorLor (HKU)**



“This is entirely a memorable study tour for me. This trip gave me a good opportunity to learn a lot and it was the most precious experience. In the trip, I gained lots of knowledge from the university visits, technical visits, etc. It provided many special experiences for us. Besides, people in Thailand were so nice and I enjoyed those days under their enthusiasm.

On the other hand, I made many new friends from other countries, not only Thailand, but also Malaysia, Taiwan, Philippines, etc, so I could know more about the cultures of different countries. Finally, I am glad that I have a chance to join this study tour, if I have a chance, I must join this valuable tour again.”

**Li Shuk Wan, Iris (HKU)**

“This is the first time that I joined ASHRAE study tour. During this 7 days tour, I gained lots of experiences. I can learn a lot of design concept in the site visit and factory visit. It is very useful in my design project and my future career. Also, I met lots of people in the banquet dinner and University visit. It is a good chance for me to share my experience with them. Finally, I have to thank you all the people that involved organizing this tour for us.”

**Chow Chi Fung, Taylor (CityU)**





“It was my first time to visit Thailand. This was an unforgettable study tour for me because it was great different from the past study tour that I have participated in. We had to perform in the banquet dinner. Fortunately, our performance is quite successful. In this tour, I have learnt not only many technical knowledge but also knew and felt more about the local culture. Besides, I was glad that I have met many friends from different places. They taught me some of their languages. It was a good chance for me to communicate

with them.

Finally, I would like to thank ASHRAE Hong Kong Chapter to organize this valuable and memorable tour for us.”

**Ho Sze Wing, Cici (CityU)**

”It is my first time to join ASHRAE study tour and visit to Thailand. This study tour is a memorable journey in my life. I met many people from other countries and shared our countries culture.

In this study tour, the schedule was very tight, Thailand Chapter has organized to visit two factories, and we can recognize air conditioners producing processes. Also, we visited two universities in Thailand to exchange our study life.

I was very enjoy this trip, I hope see you all in Singapore next year!”

**NG Wing Chi, Cherry (IVE)**



11. Photo Gallery



*Say Bye to HK*



*HK ! Good Show !*



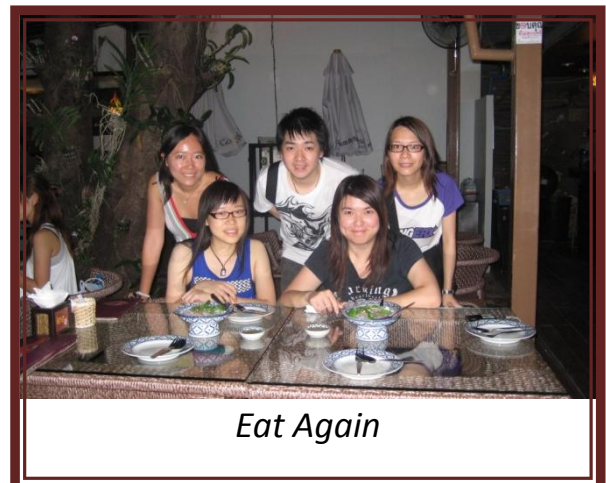
*~ Our lovely Girls ~*



*Delicious Thai Food~*



*We LOVE Durian !!*



*Eat Again*



*Night Market*



*BTS*



*Traditional Thai Dessert*



*~ Giant Palace ~*



*Shopping !!*



*Beautiful Design !*





***Jointly Organized by:***

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- ASHRAE HKU Student Branch**
- ASHRAE HKUST Student Branch**
- ASHRAE IVE Student Branch**
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