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**6. Local Seminars and Visits**

This Denmark delegation offered a great opportunity for sixteen delegates to find out more about climate change and what as a young engineer can do to tackle climate change. Nevertheless, saving our planet requires joint efforts by every people.

In order to enhance HKIE members' knowledge of climate change and its impacts to our planet, as well as to equip delegates with an in-depth understanding about Hong Kong's current action in response to climate change for sharing with Danish experts, a

local event series, namely "YMC Overseas Delegation 2010 to Denmark – Local Seminar and Visit Series" which comprised eight seminars and three visits, was arranged. Distinguished speakers were invited to share their knowledge of climate change and engineering climate solutions. More than 600 members attended the seminars or visits organized under this series.

This section presents the highlight of this local event series and the following table summarizes the local activities according to the date of event.

Topic	Date	Speakers
<b>Climate Change</b>		
Seminar on Work Around the Clock on Climate Change	26 Nov 2009	Dr. William Y P YU Head of Climate Program WWF Hong Kong
Seminar on The Science of Climate Change	11 Dec 2009	Mr. Edwin GINN Senior Scientific Officer The Hong Kong Observatory
Seminar on A Cost-effective Micro Wind Turbines for Buildings	7 Jan 2010	Dr. Michael LEUNG Assistant Professor Department of Mechanical Engineering The University of Hong Kong
Seminar on Development of Integrated Waste Management Facilities in Hong Kong	1 Feb 2010	Mr. P H LUI Principal Environmental Protection Officer (Infrastructure Planning) Environmental Protection Department
Seminar on Electric Vehicle and Charging Infrastructure Development in Hong Kong	24 Feb 2010	Mr. Ron CHUNG Senior Strategic Planner CLP Power Hong Kong Limited
Site Visit to Landfill Gas Utilization Project in NENT Landfill	13 Mar 2010	Mr. Benny LIU Project Manager Far East Landfill Technologies Ltd.
Seminar on Sustainable Bridge - Support to Offshore Wind Farm and Energy Storage	17 Mar 2010	Dr. Carlos WONG Associate Director Ove Arup & Partners Hong Kong Limited
Seminar on Energy Saving and Sustainable Air-conditioning System - District Cooling System	29 Mar 2010	Dr. Raymond YAU Director Ove Arup & Partners Hong Kong Limited
Seminar on Practical Aspects of Energy Audit in Buildings	30 Mar 2010	Ir Colin CHUNG Director Parson Brinckerhoff (Asia) Limited
Site Visit to Lok Ma Chau Wetland	8 May 2010	Mr. Peter CHOI Environmental Engineer MTR Corporation Limited
Site Visit to Castle Peak Power Station and Emission Control Project Site	22 May 2010	Mr. W H CHEUK Site Representative CLP Power HK Limited



Fig. 6.1 Dr. William Yu, Head of Climate Program from WWF Hong Kong introducing impact of climate change to participants

To open the curtain for the Delegation local event series, two introductory seminars aiming at enriching members' understanding about climate change and meanwhile, inspiring them to think about their role in climate change, were arranged.

The first seminar provided information about worldwide phenomena and impacts of climate change, and what people could do in the daily life to conserve energy and reduce carbon emission. Subsequently, the second seminar explained from a scientific point of view what climate change is and provided scientific evidence of climate change. The "sea levels rise" which is a result of global warming and "greater extreme weather events" are two major phenomena of climate change. All evidences proved that "human influence" is the major cause of climate change and people should act now to struggle against it.



Fig. 6.2 Mr. Edwin Ginn, Senior Scientific Officer from Hong Kong Observatory explaining climate change

In response to climate change, Hong Kong has developed her own technologies notwithstanding the limitations and



Fig. 6.3 Dr. Michael Leung, Assistant Professor from the University of Hong Kong sharing his experience in wind technology with participants

constraints. Accordingly, two seminars on wind energy as renewable energy to combat with climate change challenges were organized to provide the picture of the current wind energy technology in Hong Kong.

Given the limited space and relatively low wind speed (3-4m/s) in Hong Kong, Micro Wind Turbines, which could be one of the feasible technologies for the application of renewable energies in densely populated urban areas like Hong Kong, has been developed. These turbines are capable to transform low-speed wind power into electricity and the compact size is with minimal visual impact.



Fig. 6.4 Ir Mandy Leung, Deputy Delegation Manager presenting souvenir to Dr. Michael Leung

As the output by wind-driven electricity generation usually fluctuates, it brings difficulty in connecting wind generated electricity to existing AC electricity supply grid. The implementation of the Compressed Air Storage System was adopted such that extra wind energy margin would be stored and released later during peak hour energy demand. In a study for the Hong Kong, Zhuhai

and Macau Bridge Project, it was noted that the bridge structural space under the traffic deck could be utilized for air storage. This approach further enabled heat exchanges for district cooling and heating during the air compressing stage and pressure releasing stage.



Fig. 6.5 Dr. Carlos Wong, Associate Director from Ove Arup & Partners Hong Kong Limited delivering a talk on Sustainable Bridge to Support Offshore Wind Farm and Energy Storage

Given the expectation that capacity of the existing landfills will be exhausted by 2020, there are plans by the Hong Kong Government to reconsider building incineration plant for waste management. A seminar on Integrated Waste Management Facilities (IWMF) and a visit to NENT Landfill were held to explore the advantages of incineration plant and landfill gas utilization as solutions to climate change.

The first phase of the IWMF, with a treatment capacity of approximately 3000 tonnes per day, would adopt incineration as the core



Fig. 6.6 Ir Crystal Ho, Delegation Manager presenting souvenir to Mr. P H Lui, Principal Environmental Protection Officer from Environmental Protection Department

technology to reduce waste volume and to recover energy. A demonstration-scale sorting/recycling plant would also be included to recover recyclables from mixed municipal solid waste. A public engagement exercise had been carried out to obtain views from the public and to encourage public acceptance of the IWMF.



Fig. 6.7 Mr. Benny Liu, Project Manager from Far East Landfill Technologies Ltd. introducing the NENT landfill

Landfills have long been adopted in Hong Kong as the common waste treatment method. Throughout the land-filling process, a by-product landfill gas, methane, which is known as one of the greenhouse gases, is generated. However, if it is properly used, it not only minimizes the emission of green house gas into the atmosphere, but also provides a source of renewable energy. In the visit to landfill gas utilization project in NENT Landfill, participants learnt the concept of generating "energy from waste" and the operation of the Landfill Gas Treatment Unit. The Landfill Gas Treatment Unit turns the raw landfill



Fig. 6.8 Group photo in front of the Landfill Gas Treatment Unit

gas to synthetic natural gas and delivers it to Towngas, one of the largest energy suppliers in Hong Kong. By converting waste to energy, both the climate and economy of Hong Kong would gain mutual benefit.

A seminar on electric vehicles and charging infrastructure development in Hong Kong was held to introduce the current situation of electric vehicles development in Hong Kong.

Electric vehicles do not have tailpipe emissions and can help improve roadside air quality. Also, the carbon emissions from the centralized electricity supply in the power plant are easier to control than thousands of individual motor vehicles. Through introduction of electric vehicles into the transportation system, the low carbon emission Hong Kong can be achieved. In parallel with electric vehicles, the respective charging system and infrastructure has to be efficient, compact and readily available in order to cope with the limited availability of spaces in Hong Kong. Quick charger with more demanding communication standard and protocol are the areas for exploring mass rollout of electric vehicles in Hong Kong.



Fig. 6.9 Souvenir presentation to Mr. Ron Chung, Senior Strategic Planner from CLP Power Hong Kong Limited

Seminars on district cooling system (DCS) and energy audit were held to enhance members' knowledge of energy efficiency as a solution to relieve climate change. DCS is a centralized cooling system which provides chilled water to the air-conditioning system.

By employing DCS, the central chiller plant supplies chilled water which is then conveyed to the user buildings via underground chilled water pipe network. Being particular suitable for developments with high resident/tenant occupancy density, DCS is expected to be a suitable chilling solution for South East Kowloon Development and Kai Tak Development in Hong Kong.



Fig. 6.10 Dr. Raymond Yau, Director from Ove Arup & Partners Hong Kong Limited delivering a talk on Energy Saving and Sustainable Air-conditioning System - District Cooling System

Apart from DCS, energy audit in buildings also helps saving energy and in turn reducing carbon emission, protecting the environment and saving cost and finally achieving sustainability. The awareness towards energy saving and efficiency should be raised among the community to bringing Hong Kong towards a low carbon future.



Fig. 6.11a Ir Colin Chung, Director from Parson Brinckerhoff (Asia) Limited introducing Buildings' Energy Audit to participants



Fig. 6.11b Ir Colin Chung, Director from Parson Brinckerhoff (Asia) Limited introducing Buildings' Energy Audit to participants

Yet the most effective solution in combating with the challenges from climate change is the joint-efforts between human and the respect for the environment. For example, prior to the introduction of Lok Ma Chau (LMC) Spur Line which provided a railway alternative bringing Hong Kong people to the mainland, the wetlands and fishponds nearby were not well managed and bore low ecological values. However, with the Spur Line, a number of mitigation measures, such as pond bund reprofiling, island creation, fish stocking, installation of piping system and planting, had been considered and implemented to protect the wetlands and fishponds. These measures not only revitalized the wetlands mutually with urban development, but also sustained the green environment of Hong Kong.

In addition, a wastewater treatment system was also installed in the LMC Station. This feature was to adopt the "Zero Discharge Policy" in Deep Bay, where water from the nearby San Tin Eastern Main Drainage Channel (STEMDC) was pumped to the reed beds for treatment so that pollutants from LMC discharged to the Shenzhen River could be offset by the reduction of STEMDC pollutants. In the light of the development in LMC, the total amount of pollutant being discharged into Shenzhen River had been largely reduced.

Finally, a visit to Castle Peak power station (CPPS), one of the world's largest coal-fired power stations with eight generation units (four units of 350 MW and four units of 677

MW), was held to study the recent emission control (EC) project by the CLP Power Hong Kong Limited (CLP), which demonstrated the key drivers for CLP in meeting the 2010 emissions reduction targets. It is expected that with the help of various technologies including selective catalytic reduction systems and scrubber systems, the EC project could further reduce the NOx and RSP emissions by 50% and 99% respectively.



Fig. 6.12 The Castle Peak power station operated by CLP Power Hong Kong Limited

## 7. Conclusion

### 7.1 Summary

In hearing the prolonged ringing of the call from Climate Change, particularly during recent years, YMC had decided to take our step forward in boldly answering the call by organizing the YMC Overseas Delegation 2010 under the theme of "Climate Change". The main purpose of this Delegation was to raise the attention of young engineers the importance of climate change and inspire them the possible solutions in tackling with it. With regard to the pioneering vision and technologies as well as the sophisticated policies in combating against climate change, Denmark had been chosen as the destination of the Delegation.

In order to comprehensively explore the solutions to climate change, the Delegation was divided into three areas of study: Danish green policies, engineering technologies and engineering in practice. Through the 8-day visit in Denmark, the Delegation had ridden the time-machine in looking back on the early awareness by Denmark towards the consequences of climate change dated back to the 1970s and looking forward to their establishment of directive vision, policies and innovative technologies in parading towards a low carbon future since then.

On the Danish green policies, the exchange with the Danish Energy Agency enlightened delegates with the promising target by Denmark in reducing its greenhouse gas emission by 20% relative to 2005 by the year 2020, where the base for this target had been well established on the already-adopted energy taxes, combined heat and power plants, waste treatment plants, reliance on renewable energy, support to innovative researches and building energy efficiency regulations. Delegates also learned about both the institutional and industrial support to the Danish Government on energy and climate change policies during the visits to the Danish Society of Engineers and the Confederation of Danish Industries.

For the engineering technologies, delegates

studied some of the innovative and advanced technological solutions by different sectors of Denmark to tackling climate change through visits to ClearnCharge, the district cooling development project "Kongens Nytorv" and the Technical University of Copenhagen (Department of Environmental Engineering). Similar to Hong Kong, Denmark has been exploring the possibility of bringing electric vehicles, district cooling systems and sophisticated waste management systems into the mass public for a greener and more efficient energy prospect and for relieving the problem of greenhouse gas emission.

While on engineering in practice, the findings from the visits to Avedøre Combined Power Station and Wind Turbines and Amagerforbrænding Waste Incineration Plant were as equally inspiring. The concept of combining heat and power generation together with waste incineration had showed the success of Denmark in utilizing residual heat for the need of the country and achieving the respective high energy efficiency while at the same time targeting at low carbon emission during power generation. Delegates had also witnessed the achievement by Municipality of Copenhagen and the University of Copenhagen in pushing forward low energy buildings in Denmark. Furthermore, the adoption of solar panels and green roofs on the buildings within Copenhagen had also provided delegates with the vision of how renewable energy and greening could blend into a developed city.

The Delegation had also noticed the dedication by the citizens of Denmark in jointly creating the low carbon future. The citizens' habit of having cycling as major transportation method, recycling plastic bottles and understanding the rationale behind new power stations and waste treatment plants definitely eased the path for the Danish Government to bring forward their initiatives in tackling climate change.

In addition to the 8-day visit to Denmark, the local seminar and visit series and pre-trip studies on various climate change related topics had also equipped both delegates and

HKIE members with the knowledge of the current status, vision and technologies by Hong Kong in tackling climate change. In a nutshell, it is believed that the Overseas Delegation 2010 Series had enlightened not only 16 delegates but also members of HKIE in the possible solutions for Hong Kong to combat against climate change. So how will engineers answer the Call from Climate Change?

### 7.2. Recommendations

Indeed, delegates have found that Hong Kong has already identified the right track to answering the Call from Climate Change, but there are areas where Hong Kong's answer can get further brushed up to ensure an efficient and effective response to the call.

#### **Climate Change Policy - Hong Kong needs Common Direction!**

Despite the efforts by the Hong Kong Government and certain NGOs in developing and launching numerous policies and schemes to combat with climate change, the mutual vision among all parties on emission reduction target, low carbon city plan and the direction of Hong Kong's response to climate change will definitely ease the path for Hong Kong to step forward. There is no doubt that the Hong Kong Government carries the leading role in coagulating the wisdom by all parties to set forth the common direction for Hong Kong's own Climate Change Policies. Moreover, the Hong Kong Government shall also strengthen the tie between Hong Kong and Mainland China to match Hong Kong's pace with the advancements by Mainland China in achieving the national emission targets.

#### **Researches and Developments of New Technologies - Support is needed!**

The reliance on innovative technology and renewable energy is one of the most effective solutions towards the battle against climate change. Yet due to the unique geography and development status, each city or country will have their own particular way out for tackling

climate change efficiently. The micro wind turbine project in Hong Kong exactly illustrated how the particular technology can help Hong Kong solving her own climate change problem. During the sharing with various speakers in Denmark, the implementation of district cooling system, waste incineration, low energy buildings and renewable energy in Hong Kong had been well-encouraged and recognized as with huge beneficial potential. Thus, sufficient financial support should be provided to the local research projects to help bridging them to the actual market.

#### **Public Engagement - Let's Answer the Call Together!**

The future of Hong Kong belongs to every citizen of Hong Kong, and only with the full support from the citizens could the initiatives and policies by both the Hong Kong Government and NGOs be brought out for tackling climate change. The Hong Kong Government and NGOs share the mutual responsibility in educating the public of the consequences in not promptly answering the Call from Climate Change and the various solutions for ensuring a sustainable low carbon future. With the success of plastic bag levy ahead, we believe the mutual recognition among the government, NGOs and the community will definitely pave the wide free road for Hong Kong towards the low carbon future.

This Delegation Report not just raised the finishing line flag of the YMC Overseas Delegation 2010, but also waved the starting line flag for our young engineers and the entire Hong Kong community to answering the Call from Climate Change. How will engineers be answering the call? How will the future of Hong Kong be? The history will tell, but delegates are boldly optimistic from our engineering instinct!



Way Back to Cold Winter or Way Forward to Vivid Spring?



**Ir Dr Andrew K C CHAN  
JP**  
**The President of HKIE**

Ir Dr Andrew Chan, the President of the Hong Kong Institution of Engineers for Session 2009/2010, is the Deputy Chairman of the global Arup Group, a multi-disciplinary consulting practice. Before his current appointment, he was Chairman of Arup's East Asia Region and of Arup Hong Kong.

He is a civil and geotechnical engineer and has been involved in and responsible for many major building and infrastructure projects in Hong Kong, mainland China and in the region. In recent years, he and his Arup colleagues have been active in research and application of sustainability concepts for planning and for the design of buildings and infrastructure.

Over the years, Ir Dr. Chan has served on numerous government advisory bodies in Hong Kong. From 2003 to 2008, he was appointed a member of the ICAC Corruption Prevention Advisory Committee. Currently, he is the founding Chairman of the Hong Kong Green Building Council, a Fellow of the Hong Kong Academy of Engineering Science, and a member of the Construction Industry Council. He has been an advisor to the Department of Civil Engineering of The University of Hong Kong and an advisor and Adjunct Professor to The Hong Kong University of Science and Technology's Department of Civil Engineering and School of Engineering. He has lectured widely at universities and conferences in UK, Hong Kong and the region and published many papers on projects and practices of planning, design and construction.

With his remarkable engineering achievements and service to the community, Ir Dr. Chan has been appointed a Justice of the Peace by the HKSAR Government.



**Ir Otto L T POON**  
**BBS OBE**  
**The Past President of HKIE**

Ir Otto Poon was educated in Hong Kong and England.

He is a Chartered Engineer with over 40 years' experience in E&M engineering. He established Analogue Group of Companies in 1977 which has developed into diversified international engineering operations with over 1,500 staff in Hong Kong, Macau and Mainland China specialise in IT, security, environmental, process control, elevator, escalator, electrical and mechanical equipment and plant.

He was a Member of Advisory Council on the Environment, Chairman of Environmental Impact Assessment Subcommittee, Chairman of Energy Advisory Committee, Member of Solicitors Disciplinary Tribunal Panel, Member of Council for Sustainable Development, Chairman of Strategy Subcommittee and Member of Trustee Board, Institution of Mechanical Engineers, UK. He was also the President of the Hong Kong Institution of Engineers (1998/1999), President of Hong Kong Association of Energy Engineers (2004-2008), and President of Association of Energy Engineers, Hong Kong Chapter (2006-2009).

He now serves as the Adviser to Bauhinia Foundation Research Centre, Chairman of Hong Kong Climate Change Forum, Council Member of Chinese Mechanical Engineering Society, and President of the Hong Kong Federation of Electrical and Mechanical Contractors.

Ir Poon was awarded OBE in 1996 and BBS in 2003. He was elected as an Outstanding Hong Kong Polytechnic University Alumni in 1999 and an Outstanding Branch Member of the Year (2003-04) by the Institution of Mechanical Engineers, UK. He was made a Fellow of the Hong Kong Polytechnic University in 2007.

#### **Disclaimer**

*This report was prepared for the HKIE-YMC Denmark Delegation 2010 which was carried out under the HKIE Session 2009-2010. The findings and recommendations made in this report were based on the study by the Delegation up to the date of 21 June 2010.*



**Ir Edmund K H LEUNG**  
SBS OBE JP  
The Past President of HKIE

Ir Edmund Leung is a professional engineer with broad-based experience covering power, manufacturing and construction industry.

Graduated from University of Hong Kong in Mechanical Engineering, he worked for the power utilities, a manufacturer, contracting and consulting organizations and helped to plan, design and construct many infrastructure projects including railways and tunnels and many complex building projects.

He retired from Hyder Consulting Limited in 2003 and served as part-time advisors and independent non-executive directors for various organizations. In 2009 he re-embarked on full time work when he was appointed as the Managing Director of Hsin Chong Construction Group Limited.

He had served as the President of The Hong Kong Institution of Engineers, Chairman of the Hong Kong Branch and Council Member, of the Institution of Mechanical Engineers.

He is presently the Chairman of the Energy Advisory Committee, a Board Member of the Hong Kong Airport Authority, a Member of the Town Planning Board, Chairman of the Process Review Committee of the Financial Reporting Council and a Justice of Peace.

He was awarded a Silver Bauhinia Star in 2009.



**Ir K K CHOY**  
The Vice President of HKIE

Ir K K Choy was graduated in 1975 at the Hong Kong Polytechnic with an Associateship in Structural Engineering.

After graduation, Ir Choy worked for 2 years as a site engineer for Hip Hing Construction Co. Ltd. at the construction site of the New World Centre in Tsimshatsui, Kowloon, Hong Kong. He then joined the Government in 1977, initially in the Architectural Office of the Public Works Department and was later transferred to the Buildings Ordinance Office in 1981. He has extensive experience in designing, planning, construction and control of building and civil engineering projects.

Ir Choy is a Chartered Civil and Structural Engineer, a Fellow of the Institution of Structural Engineers and the Hong Kong Institution of Engineers, and a Class 1 Registered Structural Engineer of the People's Republic of China. He is a Council Member of the Institution of Structural Engineers, United Kingdom. He also serves the Hong Kong Institution of Engineers as a Vice President and the Hong Kong Professional Green Building Council as a Vice Chairman and the Chairman of the Board of Education and Research.

Presently, Ir Choy is an Assistant Director of the Buildings Department responsible for all structural engineering and related matters. He has been appointed as an Adjunct Professor of the University of Hong Kong and the Hong Kong Polytechnic University since 2004.



**Ir Gary C W KO**  
The CPDC Chairman of HKIE

Ir Gary Ko began his engineering career in CLP Power Hong Kong Limited as a Graduate Trainee after graduating with first class honours in electrical engineering from the University of Southampton, United Kingdom in 1980.

Ir Ko moved to the contracting business by joining Kum Shing Group as a Contracts Manager in 1991. Initially responsible for electric cable trenching business, he advanced with the growth of the Group and is currently the Executive Director and Chief Operating Officer to oversee multi-disciplined contracts including: transmission and distribution cable trenching/ installation/ jointing works, 11kV/ LV overhead line installation works, 11kV to 400kV switchgear and substation plant installation and maintenance undertakings, power network relay and protection installation and testing, energy meter installation and replacement programmes, public lighting installation and replacement long term contracts, and power station generator and boiler maintenance works.

One integral part of Ir Ko's career is to serve the profession and the public. He has been the Honorary Treasurer of the Institution of Electrical Engineers Hong Kong Branch and Chairman of the Electrical Division of the HKIE. Currently he is the Vice Chairman of the CIE (Hong Kong), Chairman of the CPDC, Honorary Advisor of the Hong Kong & Kowloon Electrical Engineering & Appliances Trade Workers Union and Member of Engineers Registration Board. He is also a member of the Barristers Disciplinary Tribunal Panel and Home Purchase Allowance Appeals Committee Panel.



**Ir Victor K Y LO**  
The CPDC Deputy Chairman of HKIE

Ir Victor Lo is the Deputy Chairman of the CPDC and serving the Civil Division Committee. He has organized hundreds of site visits, technical meetings, seminars and conference for the members in his ten years of service with the Institution. Ir Lo has involved in the delegation's candidate selection interview. He is now working in the Development Bureaus of the Hong Kong Government and responsible for the Hong Kong Government's Post-Wenchuan Earthquake Restoration and Reconstruction support work in Sichuan of mainland China.



**Ir Crystal W C HO (Civil Engineering)**  
**Delegation Manager and YMC Immediate Past Chairman**

Crystal is working as a Design Management Engineer I - Civil in the MTR Corporation Limited and has years of experience in the area of civil, building and geotechnical management and design works. Upon obtaining her Bachelor and Master's degrees in Environmental Engineering from the Hong Kong Polytechnic University, she has started her career in the engineering profession in private and public sectors. Crystal first joined the YMC as a helper in community services group and was elected as a committee member in 2005 and followed by the Honorary Secretary. She was the Chairman in 2008/2009 in which she received the Young Engineer of the Year Award 2009. In leisure, she enjoys serving the community which requires execution of the engineering expertise. She is also a member of the Public Affairs Forum and Appeal Board Panel under the Amusement Rides (Safety) Ordinance of the Home Affairs Bureau.



**Ir Mandy M Y LEUNG (Electrical Engineering)**  
**Deputy Delegation Manager and YMC Honorary Secretary**

Mandy graduated from the University of Hong Kong with a Master and Bachelor Degree in Electrical and Electronic Engineering, and obtained her MBA degree from the Chinese University of Hong Kong. She is currently working at CLP Power Hong Kong Ltd., in the capacity of Grid Planning Engineer, responsible for the planning of power grid network. Mandy first joined YMC as a helper to Public Relations group in 2003 and was elected committee member in 2005. During the sessions, she has led different working groups including seminars, non-technical programs and graduate promotion, and is now the Honorary Secretary in the current session.



**Mr Ryan H L CHAK (Civil & Structural Engineering)**  
**Deputy Delegation Manager and YMC Committee Member**

Ryan obtained the Bachelor of Engineering (Hons) in Civil and Structural Engineering in the Hong Kong Polytechnic University in 2005. He works as an engineer in Tunnel and Ground Engineering Department of Atkins China Limited.

He has been a YMC committee member since 2008. He is actively participated in the YMC activities which included both local and overseas events.



**Ms. Norelle Y H LI (Geotechnical Engineering)**  
**Secretary**

Norelle graduated from the University of Hong Kong with a Bachelor degree in Civil Engineering and is currently pursuing her Master degree in Geotechnical Engineering. She joined Atkins China Limited as a Graduate Engineer in 2008. She has been involved in various railway projects and gained her training experience of blasting assessment and site formation. Norelle has taken part in different activities organized by YMC since graduation and joined the Public Relations Group as well as the Community Services Group as a helper.



**Mr. Patrick W H LAI (Electrical Engineering)**  
**Treasurer**

Patrick graduated from the University of Hong Kong with a Bachelor Degree in Electrical Engineering. He is currently working at CLP Power Hong Kong Ltd. as an engineer in Regional Construction Branch. He also had experience in the planning and design of power distribution network. Being interested in power generation and transmission technologies, he continues to explore and search for the best solution to cope with the global climate change.



**Ir Emily W S HUNG (Environmental Engineering)**  
**Local Liaison Officer and YMC Committee Member**

Emily graduated from the MSc programme in Environmental Engineering of the Hong Kong University of Science and Technology in 2004. She is currently working as an environmental consultant in Ove Arup & Partners HK Ltd. Her job duties are to conduct Environmental Impact Assessments, especially air and noise impact assessments. She is a committee member of YMC and the coordinator of the Visit Group. Her responsibility is to organize a number of technical visits to our young engineers so as to enrich their technical knowledge. As one of the overseas delegates, she expects to explore more the issue of climate change in Denmark.



**Mr. Samuel N S KWONG (Civil & Structural Engineering)**  
**Local Liaison Officer**

Samuel graduated from the Hong Kong University of Science and Technology in 2008, majoring in Bachelor of Engineering (Civil and Structural Engineering). He is now working as a graduate geotechnical engineer in Greg Wong & Associates Limited under the HKIE Scheme-A training, with working experiences in foundation design and basement excavation design. Recently he works as a site resident engineer in an international school development site and a private residential development site in a hilly area.

In his site life, he reckons that the construction industry produces a lot of GHG (Green House Gases) everyday, and many of the construction machines (for example, bull dozer) are powered by diesel. Certainly there is a need of change in the use of energy for preserving the environment and save the earth. That's what he hopes to learn from this Denmark delegation tour for more advancing technology and engineering insight in the regard of fighting against global warming.



**Ms. Fiona H Y FONG (Geotechnical Engineering)**  
**Logistics Officer**

Fiona graduated from the University of Hong Kong with a Bachelor Degree in Civil Engineering and obtained her Master's degree in Soil Mechanics at Imperial College London. Upon graduation, she joined the Civil Engineering and Development Department of the Hong Kong Government as a Geotechnical Engineering Graduate. She is currently seconded to the construction site of a major highway reconstruction project in Hong Kong and involved in design review, site supervision and contract administration. She always enjoys travelling, learning cultures of different countries, and exchanging ideas with people from all walks of life.



**Ms. Eunice Y M TSE (Civil Engineering)**  
**Logistics Officer**

Eunice got her bachelor degree and master of philosophy in civil engineering from the Hong Kong University of Science and Technology in 2006 and 2008 respectively. She is currently working for the MTR Corporation Limited as a graduate engineer.

Hiking and traveling are her interests through which she can explore the beauty of the world. Joining YMC Overseas Delegation 2010 to Denmark enables her to make friends in both Hong Kong and Denmark in addition to exploring Denmark. Last but not least, she can learn more about climate change and join to cope with such a global challenge.



**Ms. Carol S N LAU (Civil & Structural Engineering)**  
**Overseas Liaison Officer**

Carol obtained her Bachelor Degree in Civil and Structural Engineering and General Business Management from the Hong Kong University of Science and Technology in 2008. Upon graduation, she joined Ove Arup & Partners HK Ltd as a Graduate Engineer. She has been involved in a major railway project, for the design of underground structures and canopies. As a member of the Delegation team, she is honoured to represent YMC as an overseas delegate for the first time.



**Mr. Kenny C M OR (Civil Engineering)**  
**Overseas Liaison Officer**

Kenny obtained his Bachelor Degree in Civil Engineering from the University of Hong Kong in 2006. He furthered his study in the field and obtained his Master of Philosophy Degree in Civil Engineering from the University of Hong Kong in 2008. Upon graduation, he joined MTR Corporation Limited as a graduate engineer. He has been involved in a major railway project, for the terminus design of national express rail link in Hong Kong. As a member of the Delegation team, he is honoured to represent YMC as an overseas delegate for the first time.



**Ms. Arlene W L LO (Civil Engineering)**  
**Public Relations Officer and YMC Deputy Chairman**

Arlene obtained her Master and Bachelor Degree in Civil and Environmental Engineering from the Hong Kong Polytechnic University and subsequently acquired professional chartership recognized by professional institutes of UK and Hong Kong. She is currently working as a civil engineer in MTR Corporation Limited. Her key experience includes utilities infrastructure assessment, design of drainage, sewerage and water main system, main laying and trenchless rehabilitation and replacement of water mains. She has joined YMC as helper since graduation and became a committee member in 2006/2007. She is the Deputy Chairman in the current session and has been actively organizing and participating in different functions such as Annual General Meeting, Annual Seminar and Annual Dinner. She was the deputy manager of YMC Overseas Delegation 2009 to Dubai and also Mainland Delegation in 2008.



**Ms. Grace P S LEUNG (Mechanical Engineering)**  
**Publication Officer**

Grace was a mechanical engineering graduate from the University of Hong Kong in 2005. She has joined CLP Power Hong Kong Limited as a graduate trainee upon her graduation. She is now working in the Generation Group of CLP as a maintenance engineer. She is interested in joining the YMC Overseas Delegation 2010 to Denmark due to the topic "Climate Change" and the country itself. Denmark is the leading country in tackling the climate change problem. She is particularly interested in finding out the "Green Culture" development in the community.



**Mr. Stephen K W TSANG (Building Services Engineering)**  
**Publication Officer**

Stephen obtained his Bachelor Degree in Building Services Engineering from the City University of Hong Kong. Having joined AECOM Asia Company Limited as a Graduate Engineer, he has participated in multi-disciplinary projects for the design of services in buildings, including residential buildings, hotels, factories as well as offices in both Hong Kong and Macau. He is currently pursuing his Master Degree of Environmental Management and Engineering in the Hong Kong Polytechnic University. Being one of the members of this delegation team, he looks forward to exploring his engineering knowledge as well as establishing relationship with foreign engineers and professionals in this delegation experience.



**Ms. Monica S M LEUNG (Electronic Engineering)**  
**Publicity Officer**

Monica obtained her Bachelor and Master Degree in Electronic Engineering from the Chinese University of Hong Kong. She has years of experience in embedded software industry, with solid knowledge in software development and wireless technologies. She is currently working in ASTRI for Communications Technologies Group, and is responsible for software development of WiMAX ASN Gateway. Monica contributes herself to YMC by joining as a helper of Public Relations Group, Community Services group and Seminar group. She hopes to take this opportunity to visit Denmark to learn Danish knowledge and technology on energy saving and environmental protection and to enhance her leadership skills by helping in organizing the Delegation.



**Mr. Regis L G CHEE (Civil & Geotechnical Engineering)**  
**Publicity Officer and YMC Committee Member**

Upon graduation as a Bachelor of Civil and Structural Engineering from the Hong Kong Polytechnic University in 2005, Regis joined Atkins China Limited and contributed to the civil and geotechnical field of the industry. Apart from his "day-time" role as a civil engineer for various site formation and slope upgrading projects as well as for the latest railway projects in Hong Kong, he has also served the YMC as a committee member. Being aware of how engineers can change the world, he is looking forward to widen his horizon in the solutions towards climate change from the YMC Overseas Delegation 2010 to Denmark.



### Crystal HO

Wind energy and waste-to-energy incineration, if they are solutions to Climate Change, it is great to know that Hong Kong will have the solutions to Climate Change soon. But as an engineer, I believe that we can do a lot more to contrive more solutions. This delegation not only gave me an insight into Danish effort in tackling climate change, but also inspired my thinking on engineering solutions to climate change.

This delegation could not be such a success without the hard work and contribution by each delegate. Thank you very much to the team. I hope our friendship will last for lifelong, just like our enthusiasm for tackling climate change. Let's work together to build our sustainable future.



### Ryan CHAK

It is a memorable experience to participate in the overseas delegation to Denmark 2010. Visiting Denmark, one of the leading countries in tackling the climate change problem, has broadened my horizon on climate solutions. Moreover, we, all 16 delegates gain valuable experience in organizing this excellent delegation!



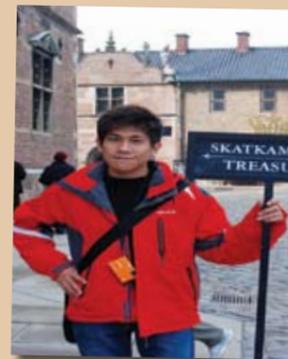
### Mandy LEUNG

Wind turbines, incinerators for waste management, solar house.... You name it, they got it. The delegation to Denmark gave the team a stunning picture with all the green technologies and green practices being put in a green city, Copenhagen of Denmark. The most impressing is her determination to drive the national efforts to address the Climate Change issue, collectively by the state, the professionals and federation of industries, and the message is all around. This delegation inspired me a more thorough thought about Climate Change, also the call for collaborative effort from engineers in Hong Kong.



### Norelle LI

Working with 15 delegates for this 7-day fruitful trip provides me a memorable experience that I cannot get from elsewhere. Through studying the delegation topic and visiting the sites as well as the institutions, I gained the insight into how Denmark pioneers the green technologies and policies. On the other hand, our home town, Hong Kong, is also stepping forward towards the environmental wonders. And now we have the inspiration of how our metropolis can do better. Apart from getting the cognition of climate change matters, it is also my pleasure to gain friendship with the other young engineers in the delegation team. Thanks to YMC for giving me such a valuable chance of involvement in organizing the delegation.



### Patrick LAI

How could a European country become the world leader in clean and sustainable energy development? After the visit to Denmark, the answer is quite obvious. Denmark has its own waste treatment and recycling facilities. They have a high demand of heat in the winter. And the people are supportive towards environmental-friendly life-style like traveling on bicycle. Strong power grid-connections also enabled Denmark to utilize hydro-power in neighbor countries to back up during insufficient wind power generation. At the same time, our home city can also identify some areas to unleash our potential for clean energy development. For example, wide application of electric vehicle and green roofs are feasible in a high density city like us. I believe that with the joint forces of Government, Corporations, Institutions and Citizens, we can create a clean future for our planet.



### Emily HUNG

It is really a fruitful delegation. The most valuable experience is to learn the sustainable concepts and technologies in Demark and compare to that of Hong Kong. I have opportunities to understand the approaches adopted in Demark, and believe that HKSARG also strives for moving towards a sustainable development. By the way, I am glad to study with other delegates in the tour, I hope we can keep in touch and wish them well in the future.



### Samuel KWONG

Being a part of the Denmark Delegation team 2010 is my great pleasure and honor. The Denmark experience is so remarkable in my life. It broadens my horizons in how Denmark demonstrates itself as a determined leadership of greenhouse gas fighter through proactive policy planning, effective education, implementation of engineering technologies and scientific researches in all walks of daily life. I would like to give sincere thanks to our teammates' hard work which make this learning trip fruitful and memorable. I would definitely recommend you to join the delegation as a challenge and chance.



### Fiona FONG

Denmark is not just the home of fairy tales and beer but also a pioneer in green policies and technology. I am grateful for having the opportunity to join this unique Delegation and explore the other side of Denmark which may not be well known to some. From conducting initial study on Denmark's experience, selecting places of visit for the trip, to compiling the report on our findings and reflections, I have appreciated the initiatives taken by Denmark to tackle climate change and gained insight on what we can do for our community in this context. However, our journey does not end here; it is just the very beginning of the uphill battle against global warming. Are you ready to take up this challenge with us?



### Eunice TSE

Thanks YMC for offering me such an invaluable opportunity to organize this delegation and develop friendships. It is an enjoyable learning experience!

Through the fruitful visits and studies, I gained more insights into the current development of green policies and technologies in Hong Kong and Denmark. Exploring in Copenhagen, what impresses me is that Danes go green in their daily life. Besides, green elements (e.g. wind turbines, PV panels and cycling infrastructures) are all around in the city. Hong Kong lacks of such a culture. It is a concern to raise public's awareness regarding climate change problems and promote "How we can help?".

As a very first step, let's work hand in hand to live a low carbon life!



### Carol LAU

It was my pleasure to participate in the Denmark Delegation and to learn about the energy policy and climate change solutions practiced there. While the pre-trip preparation work helped me to develop skills in organizing oversea delegation, the visits and technical exchanges had inspired me on what Hong Kong engineers can do on this issue. I have also gained valuable friendship with engineers from different background. Thanks should be given to YMC and the advisors for this unforgettable experience.



### Ms Grace P S LEUNG

It was a fruitful and successful delegation. A group of young and ambitious engineers together explored how the world's leading city tackled climate change problems. It was amazing to see how the city weighed heavily on the environmental factors in the building design. The key was innovation on the efficiency of energy extraction and preservation. It was also remarkable to learn how renewable energy boomed in this city. I can see the harmony between technology and environment without upsetting human beings' life quality.



### Mr Stephen K W TSANG

In this delegation, I have learnt more about the policies and green technologies for tackling climate change. This trip provided me an opportunity to enrich my leadership, communication skills as well as presentation techniques. And I have widened my horizon and expanded my social network respectively. This delegation is definitely challenging but fruitful and memorable experience in my life. I would like to thank CPDC, YMC, all advisors and fellow delegates for their support and effort in this delegation.



### Kenny OR

"How can we act against climate change?" - I do hope our findings from Denmark can hint you at some possible solutions.

Here I would like to add a note to the "Climate Vision" in Denmark: there was incident that policies promoting use of biofuels in cars were refused, as the resources could be better utilized in power plants. This inspired me to the importance of having a visionary and holistic approach in tackling climate change; or else it might end up causing even much harm to the Earth.

Being the pioneer to put climate measures into practice, engineers shall develop a "Climate Vision" over all decisions made. The other side of the world told us that technologies are ready, so it is only a matter of "when" - "When can we act against climate change?"



### Arlene LO

Working with 15 delegates for this 7-day fruitful trip provides me a memorable Denmark, being the leading country to cater for the climate change issues, and it is also a place where we can learn and explore the latest solution to address the climate change issue. It is also a place to demonstrate that it's possible to build a better future if we want.

Overseas delegation to Denmark inspires the young engineers. This journey does not mark an end with the success of the trip, instead, it gives opportunities for us to review the situation in Hong Kong and how young engineer to contribute for a better Hong Kong. Special thanks to YMC and CPDC for the continuous and precious support to make the trip happen.



### Monica LEUNG

It is an unforgettable trip to Denmark. I learnt Danish technology on energy saving through site visits, such as power station, incineration plant, and wind turbines. I was admired by Denmark's steady economic growth with energy-use reduction and the community who makes an effort to live a sustainable life - socially, ecologically and culturally. I enjoyed the trip a lot.



### Regis CHEE

The call from Climate Change has been ringing for quite some ages, and it has been an unforgettable memory for me to joining with 15 young engineers as well as our advisors in boldly answering the call by organizing the YMC Overseas Delegation to Denmark. Within the 6-day short visit to Copenhagen, we had gained a life-long vision towards the tactics in tackling with the global climate change. As a young engineer in Hong Kong, I can see our responsibilities as well as potentials in solving the problem. To be or not to be, that is the question.



Delegates Selection & Preparation Works (2 months)



Denmark Delegation (21-28 Mar 10)

Sep 09

Nov 09

Mar 10

Jun 10

Local Seminars & Visits (6 months)

Delegation Report & Presentation in HK (2 months)





@ Amalienborg



@ Kastellet



I am an Electric Car



I have no where to live. Please take me home.



@ The Royal Garden



Back to Hong Kong



Please Act Now to Tackle Climate Change.....



Six Handsomes?



Cheers!!



Come & Join us to the Canal Tour



Snap shot @ Copenhagen



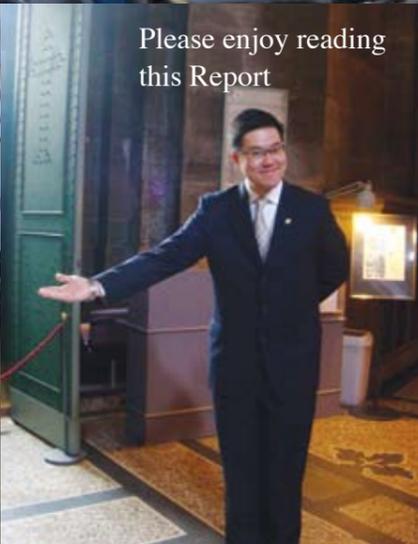
Souvenirs from Denmark!!



Danish Hot Dog - Yummy!!



Do not block my way!!



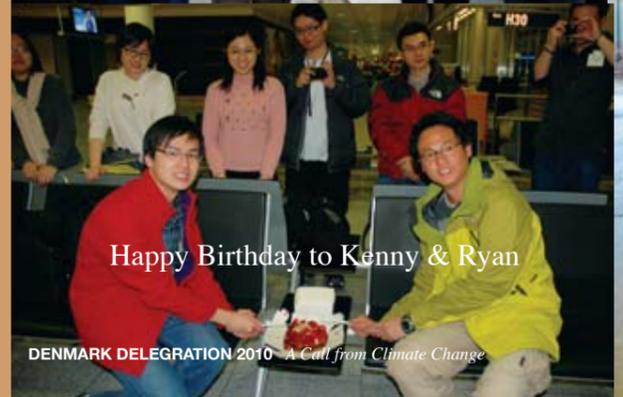
Please enjoy reading this Report



Ten Pretties?



Yes. Put the Personal Protection Equipment on~



Happy Birthday to Kenny & Ryan



@ Round Tower



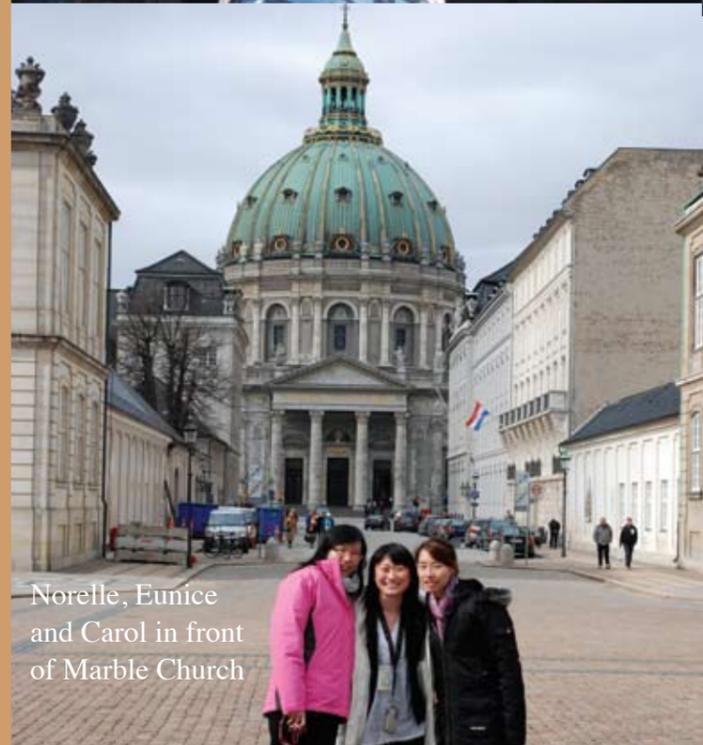
Denmark - We are Coming



Our Prince of Piano - Samuel



Our big brother - Ryan



Norelle, Eunice and Carol in front of Marble Church



Emily, Carol, Kenny, Fiona @ Kastellet



A nice view of Copenhagen



## Acknowledgement

We would like to express our deepest gratitude to the following receiving organizations for their kind assistance and enduring supports leading to the success of this delegation:

*(in alphabetical order)*

- Amagerforbrænding
- Avedøre Power Station, DONG Energy
- City of Copenhagen
- CleanCharge Solutions A/S
- Copenhagen Energy
- COWI A/S
- Danish Energy Agency
- Department of Environmental Engineering, Technical University of Denmark
- EnergyTours
- Risø National Laboratory for Sustainable Energy, Technical University of Denmark
- The Confederation of Danish Industry
- The Danish Society of Engineers
- The University of Copenhagen

We appreciate very much the financial support from the following sponsors:

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### **Silver Sponsor** *(in alphabetical order)*

- Atkins China Limited
- Greg Wong & Associates Ltd.
- The Hong Kong and China Gas Company Limited
- The Hong Kong Electric Co. Ltd.

We would like to express our special thanks to the following people for his/her kind assistance to our delegation:

- Ms. Anette BRAENDER
- Mr. Barry LEE

We would like to express our sincere thanks to the following speakers and organization for delivering a talk or offering a visit in our Delegation's local seminar and visit series:

*(in alphabetical order)*

- Dr. Michael LEUNG, The University of Hong Kong
- Dr. Carlos WONG, Ove Arup & Partners Hong Kong Limited
- Dr. Raymond YAU, Ove Arup & Partners Hong Kong Limited
- Dr. William YU, World Wide Fund For Nature Hong Kong
- Ir Colin CHUNG, Parsons Brinckerhoff (Asia) Ltd.
- Mr. T K CHENG, Environmental Protection Department
- Mr. W H CHEUK, CLP Power Hong Kong Limited
- Mr. Peter CHOI, MTR Corporation Limited
- Mr. Ron CHUNG, CLP Power Hong Kong Limited
- Mr. Edwin GINN, The Hong Kong Observatory
- Mr. Benny LIU, Far East Landfill Technologies Ltd.
- Mr. P H LUI, Environmental Protection Department