香港北角渣華道 128 號渣華商業中心 17 樓　電話：(852) 2562 7303　傳真：(852) 2565 7638　網址：www.hkaee.org
17/F Java Comm. Centre, 128 Java Road, North Point, Hong Kong　Tel: (852) 2562 7303　Fax: (852) 2565 7638　Website: www.hkaee.org

Technical Visit – The Challenge of Climate Change
(24 to 27 October 2009)

A technical visit to Beijing was organized by the Hong Kong Association of Energy Engineers between 24 and 27 October 2009. The delegates arrived the BJ airport in the afternoon together with Mr. S W Yu, Manager of Munters (HK) and went to Munters desiccant factory at Tianzhu (天竺) directly from the airport. The delegates were welcomed by Mr Tony Digmanese, Asia Emerging Region Director of Munters.

The technical visit began with a presentation about the advantages of using desiccant which is one of energy saving devices and providing good air quality to the occupants. The delegates toured in the factory and the production line as well as the final products.

Installation of Desiccant Wheel inside the Air Handling Unit

Group Photo with Mr. Tony Digmanese (L3) & Mr. S W Yu (R2)

香港北角渣華道 128 號渣華商業中心 17 樓　電話：(852) 2562 7303　傳真：(852) 2565 7638　網址：www.hkaee.org
17/F Java Comm. Centre, 128 Java Road, North Point, Hong Kong　Tel: (852) 2562 7303　Fax: (852) 2565 7638　Website: www.hkaee.org

On 26 October 2009, the delegates coached by Mr. Joseph Leung, Sales & Marketing Manager of Viessmann China, went to Dachang District (大廠區) and attended the opening ceremony of the new factory of Viessmann Solar Energy Thermo-collector Dachang Co. Ltd. (大廠菲斯曼太阳能集热器有限公司). After presenting the souverior to the Chairman of Viessmann, Dr. Martin Viessmann, the delegates together with other guests visited the manufacturing line of the vacuum tube collectors and the quality control areas.

This factory manufactures most vacuum tube solar heaters for China market and export.

The delegation leader, Ir Colin Chung, Vice-Chairman of HKAEE present the souvenir to Dr. Martin Viessmann

Inserting copper pipe (Top) into the glass tube and sealing of the vacuum tube (Bottom)

Group Photo with Mr. Joseph Leung (L2) outside the factory

香港北角渣華道 128 號渣華商業中心 17 樓　電話：(852) 2562 7303　傳真：(852) 2565 7638　網址：www.hkaee.org
17/F Java Comm. Centre, 128 Java Road, North Point, Hong Kong　Tel: (852) 2562 7303　Fax: (852) 2565 7638　Website: www.hkaee.org

In the afternoon, the delegates continued the tour and visited the Beijing Metro line 4. The project is the first railway investment project of HK MTR in the mainland China. The total investment for this project is RMB¥15.3 billion and the investment from HK MTR is about RMB¥2.25 billion. The line 4 forms the main north-south traffic artery for Beijing with a 29-km, 24 station underground metro line running from Gongixiqiao Station (公益西橋站) on the South Fourth Ring Road to the North-west Haidian District (海淀區) with its terminus at Anheqiaobei Station (安河橋北站). The line commenced commercial operations on 28 September 2009 and visited by President Hu Jin Tao (胡錦濤主席) on 7 October 2009 with high compliments. The team was warmly greeted by Mr. L W Wong (黃立偉副總經理), Deputy General Manager of Operations and Mr T C Tang (鄧鐵才經理), Operations Planning Manager of Beijing MTR (京港地鐵) at Zhongguancun Station (中關村站).

Group Photo with Mr L W Wong (L2) and Mr T C Tang (R1) in the Station Control Room

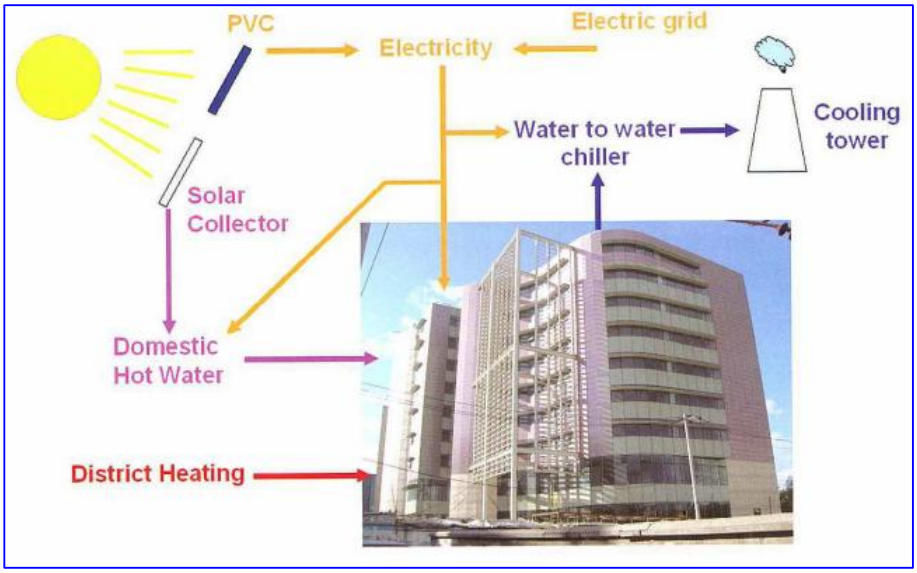
The delegates visited the station control room and the back of house plant rooms. Following the introduction of the control and operation of the station and railway, the team was coached by Mr Wong and Mr Tang by riding the train to the Anheqiaobei Station which is a park-and-ride station. The parking fares are very minimal so as to encourage the drivers to park their cars in there and ride the train to the Central districts. The main purpose is to reduce the vehicular flow from outer Beijing region to the Central districts and to relief the traffic congestion in Beijing during business peak hours.

Zhongguancun Station (中關村站)

Anheqiaobei Station (安河橋北站)

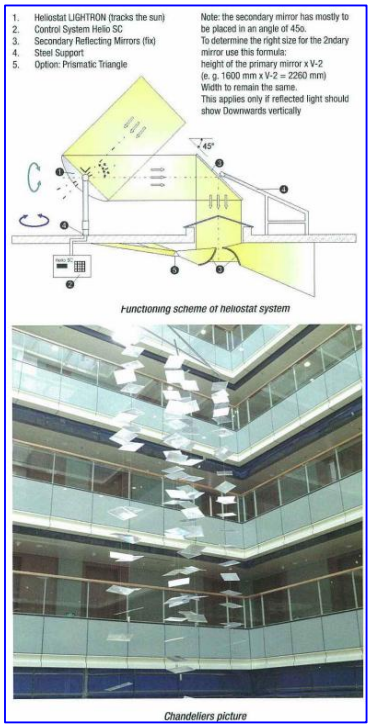
香港北角渣華道 128 號渣華商業中心 17 樓　電話：(852) 2562 7303　傳真：(852) 2565 7638　網址：www.hkaee.org
17/F Java Comm. Centre, 128 Java Road, North Point, Hong Kong　Tel: (852) 2562 7303　Fax: (852) 2565 7638　Website: www.hkaee.org

The morning session on 27 October 2009 was visiting the Beijing 4C Building. The 36m-high building located between the Jishuitan bridge (積水潭橋) and the Zizhimen bridge (西直門橋) and consists of 9 levels of office floors and 2 levels of basement with total floor area of 29,290 m^2. It is the result of an agreement signed between Ministry for Environmental Protection of China (環境保護部) and Italian Ministry for the Environment, Land and Sea. The 4C building also contains spaces for cultural and technical exchange between China and Italy regarding to environment and energy issues. After the presentation of the sustainability design of the building by the CCC Preparation Office, Foreign Economic Corporation Office, China State Environmental Protection Administration (環境保護部環境保護對外合作中心), the delegates also exchanged the views of the HK's status and the works done addressing sustainability issues with Mr Lu Bin, Division Chief (路斌處長) of the office.



香港北角渣華道 128 號渣華商業中心 17 樓　電話：(852) 2562 7303　傳真：(852) 2565 7638　網址：www.hkaee.org
17/F Java Comm. Centre, 128 Java Road, North Point, Hong Kong　Tel: (852) 2562 7303　Fax: (852) 2565 7638　Website: www.hkaee.org

The curtain wall designed by Italian architects and engineers, with ventilated facade at the North and the entire building envelope are completely insulated. All glazed areas are made of DGU low-E glass with thermal conductivity of 1.2 W/m^{2}K.



Functioning scheme of heliostat system

Chandeliers picture

The 4C building is heated through district heating and cooled by high efficiency water cooled chillers. Chilled beams are adopted for both heating and cooling in Winter and Summer. Hot water is supplied by 112m^2 vacuum solar collectors. On the roof, 16x14 panels with 210 m^2 multi-crystal photovoltaic panels are installed to produce about 20 kWe to the building. Apart from conventional occupancy sensors, DAYSIM energy control system is used to keep the lighting on and keep the blinds partially closed during the working day to avoid direct sunlight. A system of movable heliostat-mirrors are used to reflect the sunlight to the atrium and courtyard. The control unit will calculate the time, coordinates, solar position and date and adjust the position of the Heliostat to captive most of the sunlight and reflect via the secondary mirror to the desired location.

In conclusion the estimated energy saving of this building is about 47% less than other conventional buildings in Beijing.

Solar Collector (L) and Active Chilled Beam System (R)

Group Photo with Mr Lu Bin (Middle)