能源效益及相關事項通訊
A Newsletter on Energy Efficiency and Related Matters

二〇一五年一月 Jan 2015

EnergyWits 智能

第廿四期 ISSUE NO. 24

本期內容 Contents

《產品能源標籤實務守則 2014》已於2014年10月31日刊憲頒布
Code of Practice on Energy Labelling of Products 2014 was Published in the Gazette on 31 October 2014

推廣能源效益
Promoting Energy Efficiency

第三批能源審核期限即將到期！
The Deadline of the 3rd Batch of Energy Audit is Approaching!

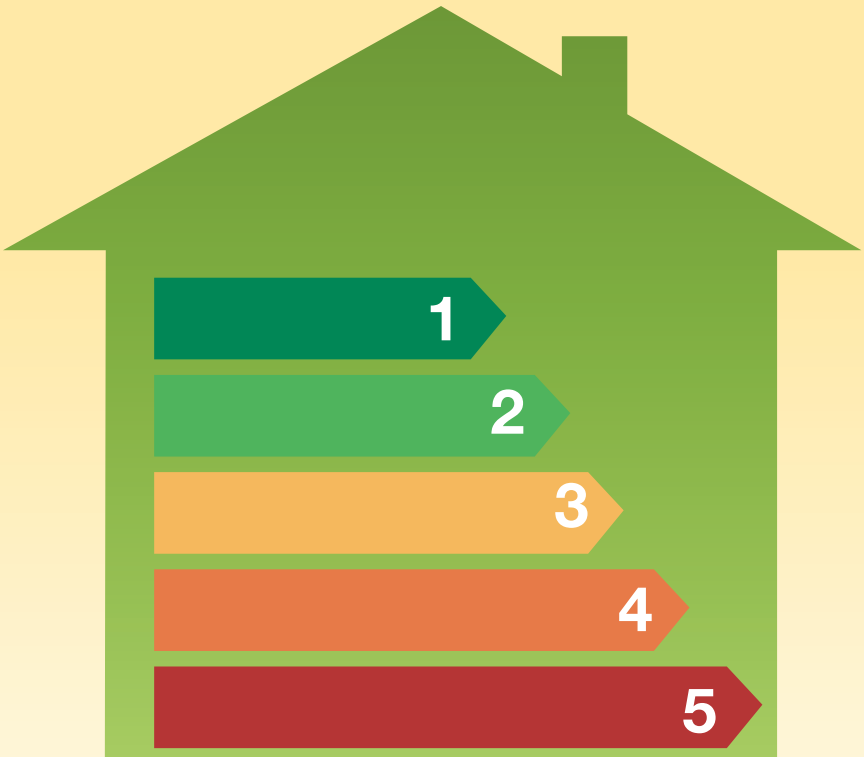
亞太區經濟合作組織第十一次能源部長會議
11th APEC Energy Ministerial Meeting

機電工程署總部教育徑
Education Path at EMSD Headquarters

啟德區域供冷系統(北廠)榮獲LEED金級和ISO 50001認證
Kai Tak District Cooling System (North Plant) Awarded LEED Gold and ISO 50001 Certification

什麼是LED?
What are LEDs?

給公眾使用的中速充電器
EV Medium Charger for Public Use



Code of Practice on Energy Labelling of Products 2014

全民節能 Save Energy Go Green

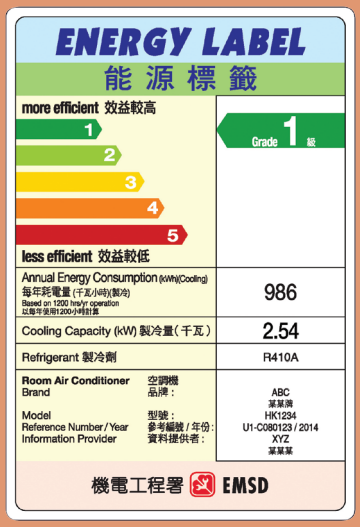
機電工程署 EMSD

《產品能源標籤實務守則2014》已於2014年10月31日刊憲頒布

Code of Practice on Energy Labelling of Products 2014 was Published in the Gazette on 31 October 2014

政府透過《能源效益（產品標籤）條例》（第598章）（下稱「條例」）推行「強制性能源效益標籤計劃」（強制性標籤計劃），規定在本港供應的訂明產品須貼上能源標籤，讓消費者知悉有關產品的能源效益表現。強制性標籤計劃現時涵蓋五類產品，即空調機（冷氣機）、冷凍器具（雪櫃）、緊湊型熒光燈（慳電膽）、洗衣機和抽濕機，該五類產品佔全香港住宅總用電量約六成。

The Government has introduced the Mandatory Energy Efficiency Labelling Scheme (MEELS) through the Energy Efficiency (Labelling of Products) Ordinance (Cap.598). Under MEELS, energy labels are required to be shown on the prescribed products for supply in Hong Kong to inform consumers of their energy efficiency performance. The MEELS currently covers five types of prescribed products, namely room air conditioners, refrigerating appliances, compact fluorescent lamps, washing machines and dehumidifiers, accounting for about 60% of the annual electricity consumption in residential sector.



能源標籤樣本
Sample of Energy Label

「產品能源標籤實務守則 2014」
Code of Practice on Energy Labelling of Products 2014

為進一步提升能源效益，機電工程署致力鼓勵引入更多高能效產品，幫助市民既慳電又慳錢，並減少碳排放以應對氣候變化。經廣泛諮詢業界及持份者後，機電工程署於2014年10月31日發布了「產品能源標籤實務守則2014」（下稱「實務守則」），提升了冷氣機、雪櫃及洗衣機的能源效益評級標準，並就該三類產品的能源效益標籤規定提供最新的實務指引和技術細則。

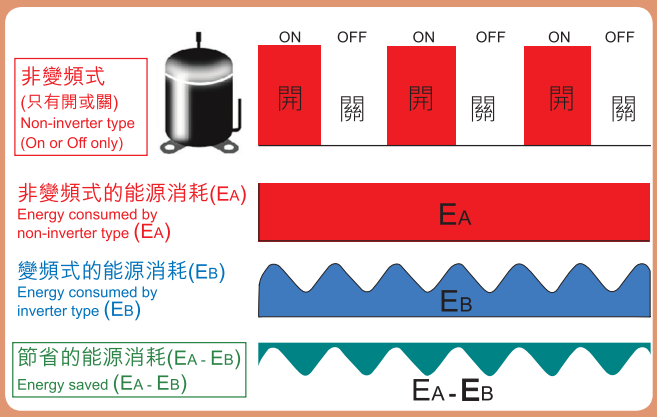
To further enhance energy efficiency, the Electrical and Mechanical Services Department (EMSD) has devoted to encouraging the introduction of more energy-efficient products with a view to facilitating the public in reducing electricity consumption and saving money as well as combating climate change through reduction of carbon emissions. After conducting an extensive consultation with the trade and stakeholders, EMSD has published the Code of Practice on Energy Labelling of Products 2014 (the Code) on 31 October 2014. The Code sets out the tightened energy efficiency grading standards for room air conditioners, refrigerating appliances and washing machines, together with the latest practical guidance and technical details in respect of the energy efficiency labelling requirements for the three prescribed products.

新能源效益級別的能源標籤將於2015年11月25日起全面實施，能源標籤樣式不變。在全面實施後，在本港供應的冷氣機、雪櫃及洗衣機必須附有新能源效益級別的能源標籤。我們估計為該三類產品實施新能源效益級別標準後，每年可節省約三億度電，即每年可減少約21萬公噸的二氧化碳排放。

The energy labels with new energy efficiency grading will be fully implemented on 25 November 2015. There is no change on the energy label format. After the full implementation, energy labels with new energy efficiency grading are required to be shown on room air conditioners, refrigerating appliances and washing machines for supply in Hong Kong. It is estimated that the implementation of new energy efficiency grading standards for these three prescribed products will result in a saving of about 300 million kWh in annual electricity consumption, which is equivalent to an annual reduction of carbon dioxide emissions of about 210,000 tonnes.

變頻技術 Inverter Technology

實務守則的最新版本包含冷氣機、雪櫃及洗衣機的能源效益級別的新計算方法及最新的測試標準。更新能源效益級別計算方法的其中一個考慮因素是科技的最新發展，例如變頻式冷氣機會按預設的溫度調節製冷量，使室內温度保持在合適水平，並且比傳統非變頻式冷氣機更具能源效益。在冷氣機的能源效益級別的新計算方法內，採用「製冷季節性表現系數」以釐定冷氣機的能源效益級別，更能反映變頻式冷氣機的實際運行情況。



變頻技術更具能源效益
More energy-efficient inverter technology

The latest version of the Code contains new calculation methods of the energy efficiency grading and latest testing standards of room air conditioners, refrigerating appliances and washing machines. When it comes to updating the calculation methods, one of the factors to be considered is the latest technological development. For instance, inverter type room air conditioners adjust cooling capacity in accordance with preset temperature, so as to maintain room temperature at a suitable level. This is more energy-efficient than the traditional non-inverter type air conditioner. In the new calculation method of the energy efficiency grading of room air conditioners, Cooling Seasonal Performance Factor is adopted to determine the energy efficiency grading of room air conditioners so as to reflect the practical operation of inverter type room air conditioners.

實務守則可於機電工程署的「能源標籤網」下載，市民亦可於正常辦公時間到機電工程署能源效益事務處查閱。
The Code is now available at EMSD's Energy Label Net and is also ready for public inspection at Energy Efficiency Office during normal office hours.

http://www.energylabel.emsd.gov.hk

推廣能源效益
Promoting Energy Efficiency

機電工程署於2014年11月1至2日在九龍灣總部舉辦開放日，機電工程署署長陳帆太平紳士於10月31日的開幕典禮上致辭，並聯同見習技術員和中小學及幼稚園學生代表主持啟動儀式，又邀請學生就節能環保議題上台發言。這次開放日的主題為「多行一步，用心服務」，機電工程署於總部露天廣場內設置13個展覽攤位，又開放機電訓練工場和政府車輛維修基地等設施，向來訪市民展示機電工程署在機電安全、能源效益和工程服務各方面的工作。

The EMSD held Open Days at its Headquarters at Kowloon Bay on 1-2 November 2014. At the Opening Ceremony on 31 October, the Director of Electrical and Mechanical Services, Mr Frank CHAN, JP, delivered an opening speech. Mr Chan, EMSD technician trainees, together with Secondary, Primary and Kindergarten student representatives officiated at the ceremony. Students were also invited to deliver speeches on energy saving and environmental protection on stage. The theme of the Open Days was "We Serve, We Care", featuring activities at 13 exhibition booths at the piazza of the Headquarters, the EMSD training centre, and the maintenance base of the government vehicle fleet etc., for the public to learn more about Electrical and Mechanical (E&M) safety, energy efficiency and engineering services works of EMSD.

開幕典禮上，學生代表、見習技術員和機電工程署代表合照
Group photo of student representatives with technician trainees and representatives from the EMSD at the opening ceremony

機電服務展覽區向來訪市民展示機電工程署在機電安全、能源效益和工程服務各方面的工作
The E&M Services Exhibition Area demonstrating E&M safety, energy efficiency and engineering services works of EMSD

多項活動推廣能源效益
Series of Activities for Promotion of Energy Efficiency

機電工程署能源效益事務處一直致力於推動能源效益及應用可再生能源，並藉著這次開放日展示這些推廣工作，希望喚起市民大眾對可再生能源科技的興趣，以及個人綠色生活以至社區可持續發展的關注。

教育徑由機電工程署總部各項節能和可再生能源設施組成，導賞團可讓訪客參觀七樓的太陽採光導管和位於天台的市區最大型太陽能光伏系統等設施，以及地下的展覽館內各項有關能源效益科技的展品。

眾多訪客參觀教育徑的節能和可再生能源設施
Numerous visitors to the energy-saving and renewable energy facilities at the Education Path

The Energy Efficiency Office (EEO) of EMSD has been devoting its effort to promotion of energy efficiency and applications of renewable energy (RE). The EEO has taken the opportunity of the EMSD Open Days to raise public's interest in RE technologies, and their concern on green living and sustainable communities.

The Education Path comprises of different energy-saving and RE facilities at the EMSD Headquarters. Guided tours would allow the visitors to visit facilities including the sunpipes (7/F), the largest photovoltaic system in urban areas of Hong Kong (rooftop) and the Exhibition Gallery (G/F) with exhibits featuring energy efficiency technologies.

啟德區域供冷系統是香港首個以大範圍服務地區及以多元化用戶群為服務對象的供冷系統，目的是提高區內製冷的能源效益並藉此減少碳排放。系統總製冷量約為284兆瓦，相等於40座30層高商業大廈的冷量需求。啟德區域供冷系統中央供冷站（北廠）首次開放予公眾人士參觀，多款電動車也於供冷站展出。由於沒有任何尾氣排放，廣泛使用電動車可幫助改善路邊空氣質素和減少溫室氣體排放，並為建設低碳及綠色經濟體作出貢獻。

中央供冷站的製冷機模型
Model showing a chiller in the central chiller plant

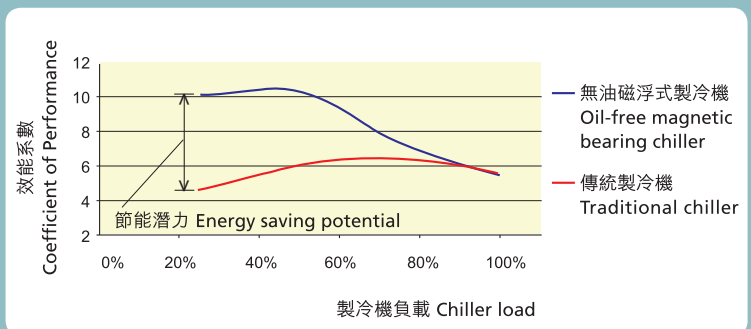
中央供冷站展出的電動車
Electric vehicles showcased at the central chiller plant

Kai Tak District Cooling System (DCS) is the first cooling system to serve a wide variety of consumers in a large area, with an aim of enhancing the energy efficiency of air conditioning systems and in turn reducing carbon emissions in the district. The total cooling capacity of the system is about 284 megawatt of refrigeration (MWr), which is equivalent to the cooling load of about 40 nos. of 30-storey commercial buildings. The Central Chiller Plant of Kai Tak DCS (North Plant) was opened to the public for the first time, together with exhibition on electric vehicles at the plant. As electric vehicles do not have tailpipe emissions, wider use of these vehicles can help to improve roadside air quality and reduce greenhouse gas emissions so as to contribute to establishing low carbon and green economy.

機電服務展覽區的能源效益事務處展覽攤位展出了一台無油磁浮式製冷機的壓縮機。它的優點是以磁浮原理運行，因此不需以油潤滑，即使於部份負載時，也比傳統製冷機的壓縮機效能更高。

The EEO exhibition booth in the E&M Services Exhibition Area showcased a compressor of oil-free magnetic bearing chiller. Using magnetic levitation, the compressor is lubricant-free and has higher efficiency than compressors of traditional chillers even in its part-load conditions.

另一項重點展品為變頻式冷氣機。變頻式冷氣機的基本結構和製冷原理跟傳統非變頻式冷氣機相似，主要分別在於變頻式冷氣機採用了變頻技術專用的壓縮機，備有性能穩定的調節系統作精確恆溫調控，避免冷氣機經常啟動開關，較一般非變頻式冷氣機操作寧靜及更有效節省能源。



無油磁浮式製冷機的節能潛力示意圖
Graph showing the energy saving potential of an oil-free magnetic bearing chiller

訪客正在了解無油磁浮軸承壓縮機的運作原理
Visitors learning the working principle of oil-free magnetic-bearing chiller compressor

Another focus of the exhibition was inverter type air conditioner. An inverter type air conditioner is similar to a non-inverter type air conditioner in its basic construction and principle of cooling. Their major difference is the type of compressor equipped. An inverter type air conditioner is equipped with a variable speed compressor, which maintains room temperature accurately and avoids frequent shutdown and restart of the air conditioner. Comparing with a non-inverter type air conditioner, it is quieter and more energy efficient.

有關變頻式冷氣機和啟德區域供冷系統的進一步資訊，請參閱今期通訊相關文章。
For further information on inverter type air conditioner and Kai Tak DCS, please refer to related articles in this newsletter.

第三批能源審核期限即將到期！

The Deadline of the 3rd Batch of Energy Audit is Approaching!

根據《建築物能源效益條例》（簡稱《條例》），商業建築物及綜合用途建築物的商業部分的擁有人，必須每十年為中央屋宇裝備裝置（包括照明裝置、空調裝置、電力裝置和升降機及自動梯裝置）進行能源審核，並於主要入口的顯眼位置展示「能源審核表格」。

現有商業建築物及綜合用途建築物的商業部分須按照《條例》附表5分為四批進行首次能源審核，當中第三批是指在1970年1月1日至1977年12月31日獲發「佔用許可證」（俗稱「入伙紙」）的建築物，其首次能源審核將於2015年9月20日到期。為遵行能源審核的規定，有關建築物的擁有人應及早委聘「註冊能源效益評核人」（簡稱「評核人」），展開能源審核。有關「評核人」的紀錄冊及聯絡名單，請瀏覽《條例》的專題網站：
http://www.beeo.emsd.gov.hk。

機電工程署首宗針對延誤進行首次能源審核的檢控個案已於2014年11月4日在東區裁判法院審訊，有關建築物的業主立案法團被裁定違反《條例》有關規定的罪名成立，判處罰款共$4,850。機電工程署正繼續嚴謹執法，並陸續對其他屢勸仍延誤進行首次能源審核的建築物擁有人採取檢控行動 。

註冊能源效益評核人紀錄冊及聯絡資料現已上載至《條例》網站，供公眾查閱。
The register of Registered Energy Assessors and their contact information are available at BEEO website for public inspection.

http://www.beeo.emsd.gov.hk

According to the Buildings Energy Efficiency Ordinance (BEEO), the owners of commercial buildings and commercial portion of composite buildings are required to carry out energy audits for the central building services installations (including lighting installation, air-conditioning installation, electrical installation as well as lift and escalator installation) once every ten years, and to display a valid Energy Audit Form in conspicuous position at the main entrance.

The owners of existing commercial buildings and commercial portion of composite buildings are required to carry out their first energy audit in four batches, according to Schedule 5 of the BEEO. Among them, owners of the third batch of buildings, which had their occupation permits issued between 1 January 1970 and 31 December 1977, must carry out the first energy audit by 20 September 2015. To comply with the energy audit requirements, the building owners should engage Registered Energy Assessors (REA) to conduct energy audit as soon as possible. For the register of REA and their contact information, please visit the dedicated website of the BEEO at
http://www.beeo.emsd.gov.hk.

The trial of the EMSD's first prosecution case against belated energy audit was conducted at the Eastern Magistrates' Courts on 4 November 2014. The Incorporated Owners of the relevant building were convicted of contravening the relevant requirements of the BEEO and fined $4,850 in total. The EMSD is continuing to strictly enforce the law and is also progressively taking prosecution actions against those building owners who still delay carrying out the first energy audit despite repeated advice.

亞太區經濟合作組織第十一次能源部長會議

11th APEC Energy Ministerial Meeting

環境局局長黃錦星率領中國香港代表團於2014年9月2日在北京出席以「亞太區攜手合作邁向能源可持續發展」為主題的亞太區經濟合作組織（亞太經合組織）第十一次能源部長會議全體大會。代表團包括環境局和機電工程署代表。

二十一個亞太經合組織成員負責能源事務的部長，在會上討論如何就能源可持續發展攜手合作，包括能源安全、能源貿易和投資、能源效益和社區可持續發展，以及推動和使用更潔淨能源。

黃局長在全體大會「能源效益和社區可持續發展」的環節上致辭，他向與會代表表示，香港已在節約能源方面建立良好的基礎，並推出多項政策和措施以管理新建及現有樓宇的能源使用需求，包括透過立法和鼓勵計劃、政府帶領作用、公眾教育及社會動員。

代表團亦藉此機會分別與新加坡及美國代表團會晤，就環境相關事宜交換意見。

環境局局長黃錦星（中排左三）2014年9月2日在北京與出席亞太區經濟合作組織第十一次能源部長會議全體大會的部長合照
The Secretary for the Environment, Mr Wong Kam-sing (second row, third left), and ministers attended the 11th APEC Energy Ministerial Meeting in Beijing on 2 September 2014

The Secretary for the Environment, Mr Wong Kam-sing, led the delegation of Hong Kong, China to participate in the plenary session of the 11th Asia-Pacific Economic Co-operation (APEC) Energy Ministerial Meeting (EMM) held in Beijing on 2 September 2014. The main theme of this EMM was "Joining Hands towards Sustainable Energy Development in Asia-Pacific Region". The delegation comprised representatives from the Environment Bureau and EMSD.

The ministers responsible for energy from 21 economies of APEC discussed at the meeting collaboration on sustainable development of energy, covering energy security, energy trade and investment, energy efficiency and sustainable communities, as well as promotion and use of cleaner energy sources.

Mr Wong delivered a speech during the plenary session titled "Energy Efficiency and Sustainable Community". He told delegates that Hong Kong has laid a good foundation on energy saving, and that a wide range of policies and measures have been introduced to manage demand for energy consumption of new buildings and existing buildings including legislation and incentives, Government leadership, public education and social mobilisation.

The delegation also took the opportunity to hold bilateral meetings with the delegations of Singapore and United States respectively to exchange views on environment-related issues.

機電工程署總部教育徑
Education Path at EMSD Headquarters

機電工程署九龍灣總部的教育徑旨在推廣能源效益及可再生能源科技，讓市民了解機電工程署在可持續發展上的措施。自2005年啟用以來，教育徑不斷增設新的節能及可再生能源設施，例如垂直綠化牆和聚光光伏板。本文將介紹最近增設的項目。

The Education Path at the EMSD Headquarters at Kowloon Bay aims to promote energy efficiency and renewable energy (RE) technologies as well as public awareness of EMSD's initiatives on sustainable development. Since its launch in 2005, the Education Path has been introducing new energy-saving facilities and RE features, such as vertical green walls and concentrated photovoltaic panels. This article will describe the new features introduced recently.

能源效益展覽館新設專題展覽
Thematic Exhibition Launched in Exhibition Gallery on Energy Efficiency and Conservation

為了提高社會對節約能源及能源效益的意識和認知，及鼓勵年青一代的研發創意，能源效益展覽館展出「創新能源項目」設計比賽得獎作品，作為專題展覽。此項比賽由中華電力及香港工程師學會電機分部舉辦，並得到香港理工大學電機工程學系、機電工程署及香港津貼中學議會的全力支持。

To enhance public awareness and recognition of energy saving and energy efficiency, and to enhance creativity of young generations on research and development, the EE&C Gallery has launched a thematic exhibition on winning entries of the Energy Innovative Project Competition. This event is jointly organized by CLP Power and HKIE Electrical Division, and is fully supported by the Hong Kong Polytechnic University, EMSD and the Hong Kong Subsidized Secondary Schools Council.

「創新能源項目」設計比賽2012-13得獎作品
Winning entries of EIPC 2012-13

導覽服務 Guided Tour Services

教育徑戶外部份可供訪客自由參觀，而參觀能源效益展覽館和室內各項設施必須預約導覽服務，詳情請瀏覽以下網址：

The outdoor portion of the Education Path is available for self-touring, while prior reservation is necessary for visiting the EE&C Gallery and energy-efficient facilities in the indoor area. For details, please refer to our website at:

http://www.emsd.gov.hk/emsd/chi/pee/ep.shtml

戶外部份新設自助導賞設施
New Facilities for Self-touring Outdoor Portion

機電工程署總部的戶外廣場有不少能源效益項目，例如空中花園和太陽能熱水系統。為方便訪客探索教育徑戶外部份，接待大堂及戶外廣場設有示意圖，各節能設施旁除豎立了載有詳細介紹的展覽板，亦設有二維碼語音導賞服務，又設有綠色方向指示牌，提示訪客鄰近節能設施之方向和距離。置身於戶外廣場中，訪客可感受到綠色回歸都市的重要性。廣場上的各項能源效益設施形成了一個推廣綠色科技的絕佳組合，以實例闡明了可持續發展的可行性。

The piazza located at the EMSD Headquarters comprises a number of energy efficiency projects, such as roof garden and solar water heating system. To facilitate visitors to explore the outdoor portion of the Education Path, layout maps have been set up in the reception lobby and at the piazza; exhibition panels with the QR code linking to the sound clips of the virtual tour guide and green signage showing the direction and location of neighbouring exhibits are available adjacent to each outdoor exhibit. The green piazza allows visitors to experience the importance of bringing nature back to urban areas. The energy-efficient features are excellent demonstrations on green technologies promotion, and real examples which shed light on the way to sustainable development.

訪客可使用智能裝置透過展覽板上的二維碼享用語音導賞服務
Visitors can use a smart device to scan QR codes on the exhibition panels and listen to the sound clips of the virtual tour guide

啟德區域供冷系統(北廠)榮獲LEED金級和ISO 50001認證
Kai Tak District Cooling System (North Plant) Awarded LEED Gold and ISO 50001 Certification

LEED金級證書
LEED Gold certificate

ISO 50001
證書
ISO 50001
certificate

LEED金級獎章
LEED Gold medal

啟德區域供冷系統(北廠)於2014年7月榮獲U.S. Green Building Council的Leadership in Energy and Environmental Design (LEED)新建建築評級體系的金級認證。它是香港第一個得到LEED金級認證的廠房。在7個評分項目當中，北廠在建址的持續性、室內環境品質、創新與設計過程和區域優先性都取得較高的分數。

北廠選址於一個已有交通網絡及社區服務的地方，它設有節能汽車優先泊車計劃和提供單車存放空間，可達到交通運輸的減排。在室內環境品質方面，北廠在建造過程中，使用低有害性的材料，減少對樓宇使用者的傷害。而且，通過增大換氣通風率可提高室內空氣質量，並於通風系統內安裝二氧化碳傳感器及氣流測量裝置來控制並監測室內空氣質量。

北廠是一個又綠化又具能源效益的廠房。它融入了屋頂綠化和垂直綠化牆於建築物的設計內，加上大片的草地和樹木，綠化面積比率逾六成，遠遠超過標準的三成比率。在能源效益方面，它使用區域供冷服務，又安裝太陽能燈，藉以節省能源，顯示綠色大廈的設計。

In July 2014, Kai Tak District Cooling System (North Plant) was awarded the Leadership in Energy and Environmental Design (LEED) Gold for new construction from U.S. Green Building Council. It is the first plant room in Hong Kong to obtain the LEED Gold certificate. Among the seven credit categories, the North Plant attains high scores on sustainable sites, indoor environmental quality, innovation and design process and regional priority credits.

The North Plant is built in an area with existing transportation network and community services. The preferred parking for fuel-efficient vehicles program and the bicycle parking storage space help to reduce transportation carbon emission. In the indoor environmental quality aspects, low hazardous materials are used in the construction of the North Plant to minimize harmful effects to the users. Enhanced ventilation improves the indoor air quality. In addition, CO_2 sensors and airflow measurement devices are installed in the mechanical ventilation system to control and monitor the indoor air quality.

The North Plant is a green and energy efficient plant room. Green roof and vertical green walls are integrated into the design of the plant room. Together with the large lawn area and trees, the greening ratio is over 60%, which is well above the standard requirement of 30%. With regard to energy efficiency, the North Plant uses district cooling services as well as solar lamps to save energy for demonstrating green building design.

安裝於北廠的太陽能燈
The solar lamp installed in North Plant

啟德區域供冷系統(北廠)的綠化面積比率逾六成
The greening ratio of Kai Tak District Cooling System (North Plant) is above 60%

由HKDCJV營運之北廠同時亦取得ISO 50001能源管理系統認證，訂下有效日常營運管理達致能源效益的長遠目標，並確立多個能源管理及改善項目，包括維持區域供冷系統的效能系數，減少日常運作上的燃料消耗，及節約屋宇裝備的平均用電量，並承諾提供足夠的訓練及講座以推廣能源效益。

At the same time, the operator of the North Plant, HKDCJV, obtained the ISO 50001 energy management system certification, setting long-term goals in effectively managing the daily operation to achieve energy efficiency, and to establish multiple energy management and improvement projects, such as maintaining the coefficient of performance of the district cooling system, reducing the fuel consumption on daily operation, reducing the electricity consumption of building services installations, and providing adequate training and seminars to promote energy efficiency.

什麼是LED?

What are LEDs?

發光二極管(LED)是固態的半導體器件，可把電能轉化為可見光線。當接上直流電源，流經半導體晶片的電流會使晶片產生某一顏色的光線。隨著技術發展與輸出功率的改進和顏色日趨多樣化，LED已應用於指示牌，交通燈，大廈外牆照明及一般照明。

Light Emitting Diodes (LEDs) are solid-state semiconductor devices that convert electrical energy into visible light. When DC supply is connected, the current flowing through the semiconductor LED chip will cause the emission of light at certain colour. As the technology is developed with improved power output and variety of colour, LEDs are used for signages, traffic lights, facade lighting and general lighting applications.

使用LED的優點
Advantages of using LED

就一般照明而言，LED照明較傳統照明技術優勝的地方為:
For general lighting purpose, LED lighting have the following superior features over conventional lighting technologies:

1. 堅固可靠 Robust and Reliable

LED本身堅固，由於沒有燈絲，所以不會有燈絲折斷的問題。LED燈泡不易因外部衝擊而損壞。

LEDs are inherently robust and have no filament to break. They are not easy to be damaged by external shock.

2. 耐用 Long Service Life

LED的使用壽命主要取決於其光通量的衰減程度。如在不超溫的情況下正常運作，高質素LED的壽命可達25,000至50,000小時，比慳電膽長約3至6倍。

The service life of LED is mainly determined by the depreciation of light output. High quality LED luminaries that work properly within their temperature limits will last about 25,000 to 50,000 hours, which is about 3 to 6 times longer than compact fluorescent lamps.

3. 色彩變化多 Versatile Colour Changes

由於LED對開關和調控訊號反應迅速，因此非常適用於營造閃動及變幻的照明效果，只要配備數碼控制器和電腦控制程式，即可輕易取得上述效果。

Since LED responds quickly to both switching and dimming signals, it is very suitable for flashing and dynamic lighting effect. This can easily be done with digital controller and computer programme.

4. 保護環境 Environmentally Friendly

LED燈比傳統燈環保。相比鎢絲燈，LED燈每瓦可發出更多的光。LED不會產生紫外線或紅外線。製造LED燈時也無需使用水銀。

LED is more friendly to environment than conventional lamps. It emits more light per watt than incandescent light bulbs. It will not produce ultraviolet (UV) or infrared (IR) radiation. No mercury is used in the manufacturing of LEDs.

LED產品的挑戰
Challenges of LED Products

由於LED技術仍在發展中，市場上的LED產品質量參差。個別廠家各有自己的測試方法，實際和聲稱的性能因此可能差別甚大。對LED燈泡及燈具的質量關注，主要是壽命、色彩偏移、光學退化和嚴重故障等。

As the LED technology is still under development, the quality of LED products in the market varies. Individual manufacturers adopt their own testing methodologies and hence there may be wide disparities between actual and claimed performance. Major quality concerns on LED lamp and luminaires are life expectancy, colour shifts, optics degradation and catastrophic failure etc.

本港的LED照明應用實例
LED Lighting Applications in Hong Kong

1. 本港的公共房屋
Public Housing in Hong Kong

香港房屋委員會的部分公共租住屋邨也有使用LED照明，例如把LED應用於街道照明、景觀照明、室內走廊照明等。

LED lighting has been used in some public rental housing estates of the Hong Kong Housing Authority. Examples are LED for street lighting, landscape lighting, internal corridor lighting etc.

公共房屋項目的太陽能LED燈
LED solar lamp in
Public Housing Project

公共房屋項目的LED燈盤
LED lighting panels in
Public Housing Project

2. 政府建築物
Government Buildings

建築署已在部分政府建築物安裝LED照明設施，包括走廊、員工餐廳、會議室、課室、禮堂、 公園、游泳池、水池的一般照明等。

Architectural Services Department has installed LED lighting in some government buildings such as general lighting at corridors, canteens, conference rooms, classrooms, assembly halls, parks, swimming pools, fountains, etc.

課室內的LED燈盤照明
LED panel lighting at classroom

學校禮堂內的LED筒燈
LED down lights in the school hall

會議室內的LED筒燈
LED down lights at conference room

食堂內的LED筒燈
LED down lights at canteen

給公眾使用的中速充電器

EV Medium Charger for Public Use

由2014年8月1日起，100個中速充電器已於16個政府停車場正式投入服務，讓公眾使用。這些充電器適用於新引入本港的電動車型號，亦同時適用於大部分現有的電動車型號。

相對於標準充電器，這些中速充電器可以減少達六成充電時間。

Since 1 August 2014, 100 nos. of medium chargers have been put in service for public use at 16 nos. of government car parks. These chargers are suitable for recharging the batteries of majority of EV models.

These medium chargers can reduce the charging time by as much as 60 percent when compared with standard chargers.

中速充電器
A medium charger

電動車正在使用中速充電器
An electric vehicle using medium charger

中速充電站的標誌牌
A signage of Medium Charging Station

目前全港已提供超過1,000個各式充電器供電動車使用。
There are currently over 1,000 nos. of EV charging points of different types for public use in Hong Kong.

聯絡資料 Contact

任何人士如欲就本通訊提出意見或詢問，請與我們聯絡，資料如下：
香港九龍啟成街3號 機電工程署能源效益事務處
電話：(852) 2808 3465 傳真：(852) 2890 6081 電郵：eepublic@emsd.gov.hk
Anyone wishing to offer comments or make enquiries about this newsletter can contact us at:
Energy Efficiency Office, Electrical and Mechanical Services Department, 3 Kai Shing Street, Kowloon, Hong Kong
Tel: (852) 2808 3465 Fax: (852) 2890 6081 Email: eepublic@emsd.gov.hk

機電工程署 EMSD

再造紙印製
Printed on recycled paper