

EnergyWits

智能

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第二屆香港能源效益獎 正式開展

Launching of

2nd Hong Kong Energy Efficiency Awards



由機電工程署主辦的第二屆「香港能源效益獎」節能比賽的開展典禮已於2006年11月20日下午4時假黃大仙龍翔中心舉行。典禮由房屋及規劃地政局局長孫明揚先生擔任主禮嘉賓。

今年比賽的目標，是所有由香港房屋委員會、香港房屋協會、領匯管理有限公司、市區重建局發展或由這些機構轄下物業管理公司管理的「住宅樓宇」及「商業樓宇」，當中包括「住戶」、「商戶」和所有「公眾地方」。這些物業所涉及的人口有三百萬人之多。今年反應非常熱烈，迄至2007年1月20日報名期滿，共有約1,600個參賽者。

比賽為期8個月（由2007年1月開始至8月為止），並設有不同獎項和獎品，詳情請參閱本署網頁（<http://www.emsd.gov.hk>）。

The 2nd "Hong Kong Energy Efficiency Awards" energy saving competition organized by the Electrical and Mechanical Services Department was officially launched on 20 November 2006 at Lung Cheung Mall. We were honoured to have Mr Michael SUEN Ming-yeung, Secretary for Housing, Planning and Lands officiate at the event.

The target buildings of the 2nd Hong Kong Energy Efficiency Awards are the residential buildings and commercial buildings developed by or under the management of the Hong Kong Housing Authority, Hong Kong Housing Society, Link Management Limited and Urban Renewal Authority. The competition is divided into "Residential" and "Commercial" categories which include all the "Households", "Tenants" and "Commercial Areas" in those premises. Approximately three million people, live or work in those premises. The response to this year's competition is encouraging, with around 1,600 entries received at the close of submission on 20 January 2007.

The competition will last for eight months (from January to August 2007). There will be various types of awards and prizes. Details of the competition are shown in the EMSD's website (<http://www.emsd.gov.hk>).



嘉賓主持開展儀式。
Guests pulled the "Save Energy" lever, and the competition was officially launched.



比賽得到各方面的鼎力支持。
The launching ceremony was packed with supporters from various sectors.



街坊踴躍回答有關節能的問題。
Active participation from the audience during quiz time.

機電工程署亦藉著這開展典禮推廣另一個能源效益項目『建築物能源效益註冊計劃』。由機電工程署頒發註冊證書予近期註冊的建築物，以表揚有關業主及物業代理對註冊計劃的支持及在建築物能源效益所作出的努力。受頒發註冊證書的包括：

At the launching ceremony, the EMSD also presented registration certificates to the owners and building management agencies of those buildings recently registered under the "Hong Kong Energy Efficiency Registration Scheme for Buildings", to commend them on their efforts to save energy for their buildings. Certificates were awarded to the following:

業主/物業管理 Owner/Management Agency	建築物 Building
香港電燈有限公司 The Hongkong Electric Co Ltd.	港燈中心 Hongkong Electric Centre
香港房屋委員會 Hong Kong Housing Authority	石陝尾邨一期 Shek Kip Mei Estate Phase 1
香港房屋協會 Hong Kong Housing Society	駿發花園、真善美村 Prosperous Garden, Chun Seen Mei Estate
市區重建局及九龍建業有限公司 Urban Renewal Authority / Kowloon Development Co Ltd.	怡峯 Mount Davis 33
信和物業管理有限公司 Sino Estates Management Ltd.	宏天廣場、電器道148號、翠海花園 Skyline Tower, 148 Electric Road, Balmoral Garden

機電工程署 風力測量計劃及 可再生能源資訊網站

EMSD Wind Measurement Programme and Renewable Energy Internet Platform

自2004年起，本署根據風力測量計劃先後建立了5個風力監測站，以收集香港東面的風力數據。風力測量計劃的主要目的是收集離地較高處的風力數據，以便就興建典型風力發電裝置評估在不同高度的風力資源。我們在各風力監測站收集了一年多的數據，而這些監測站已在2006年中拆卸。

本署把從風力監測站收集所得的短期風力數據與香港天文台氣象站所收集的長期風力數據比較，以估計風力監測站所在地點的長期風力資源參數，有關結果的摘要如下：

Since 2004, five wind monitoring stations have been progressively installed, under EMSD's wind measurement programme, to collect wind data on the eastern side of Hong Kong. The main objective of the wind measurement programme is to collect wind data at high elevations above ground so as to assess the wind resource potentials for heights above ground pertinent to typical wind power generation installations. After collecting wind data for a year, all wind monitoring stations were dismantled in 2006.

The short-term wind data collected from each of the EMSD wind monitoring stations are correlated with long-term wind data of Hong Kong Observatory's weather stations, so as to obtain estimates of long-term wind resource parameters at the locations where the EMSD wind monitoring stations have been installed. The key results are summarized below.

風力監測站 Wind monitoring station	測量桅杆的高度 Height of measurement mast	桅杆頂的風力計在主水 平基準以上的高度 Elevation above Principal Datum, for mast-top anemometer	測量期內的平均風速 Mean wind speed over measurement period	在桅杆頂高度的 長期平均風速 Long-term mean wind speed at mast top elevation
政府物流中心 Government Logistics Centre	10米m	84米m	3.0米/秒m/s	3.4米/秒m/s
砵甸乍山Pottinger Peak	50米m	255米m	5.9米/秒m/s	6.1米/秒m/s
伙頭墳洲Town Island	50米m	133米m	5.8米/秒m/s	5.9米/秒m/s
東龍洲Tung Lung Chau	50米m	203米m	5.5米/秒m/s	5.8米/秒m/s
廟仔墩Miu Tsai Tun	30米m	352米m	6.8米/秒m/s	6.8米/秒m/s

本署根據多項準則選出建立風力監測站的地點，但這些地點可能會因某些限制（例如運輸）而不適合安裝風力發電機。不過，研究結果顯示，位於郊區的風力監測站位置的長期平均風速接近或高於每秒6米，從風力資源的角度來看，這些地點大致上都適合安裝風力發電裝置。

為製作更詳盡的香港東部風力資源圖，本署現正利用從風力監測站收集到的短期風力數據及香港天文台氣象站所收集的長期風力數據，進行氣流模擬工作。詳盡的香港東部風力資源圖可在下列網站瀏覽：

<http://wind.emsd.gov.hk/>

The locations where the wind monitoring stations have been installed were chosen for wind measurement according to a number of criteria, and some are not suitable for actually installing wind turbines because of other constraints (e.g. transportation). The results indicate that the long-term mean wind speeds for the locations in the countryside areas are close to 6 m/s or higher which are generally considered suitable for developing wind power installations from the perspective of available wind resources.

In order to produce more detailed wind resource maps for the eastern part of Hong Kong, wind flow modelling work is currently being carried out by EMSD using short-term wind data of EMSD's wind monitoring stations and long-term wind data of Hong Kong Observatory's weather stations. Detailed wind resource maps for the eastern part of Hong Kong can be found at the following web site: <http://wind.emsd.gov.hk/>



離地面/海面50米的風力資源圖
Wind resource map for 50 metres elevation above ground/sea



香港可再生能源網
HK RE NET

一個有關可再生能源資訊網站 A New Website on Renewable Energy

機電工程署將於2007年3月啟用一個新的主題網站——「香港可再生能源網」。建造這個網站目的是為了向公眾提供各種可再生能源技術的資料，以期該等技術在香港得以廣泛採用。

「香港可再生能源網」會把可再生能源技術歸納為四大類：太陽能、風能、廢物轉化能源和其他。網站會提供每種特定的可再生能源技術的有關工作原理、應用考慮、應用實例、常見問題等的詳細資料。

歡迎瀏覽「香港可再生能源網」：
<http://re.emsd.gov.hk/>

EMSD will put on-line in March 2007 the **HK RE Net**, a new thematic website providing information on various renewable energy technologies to the public and aiming to facilitate the wider adoption of such technologies in Hong Kong.

The HK RE Net will introduce renewable energy technologies under four categories including Solar, Wind, Energy-from-waste, and Others. Detailed information such as working principles, application considerations, example projects, FAQs etc. will be provided for each specific type of technology.

Visit the HK RE Net at: <http://re.emsd.gov.hk/>

按需求服務的自動梯 Energy Saving Escalator by Service On Demand Control

自動梯可以設計成有乘客使用時才運行，這類電梯稱為「按需求服務」的自動梯。現時歐洲一些國家及日本均已廣泛採用這種按需求服務的自動梯。

按需求服務的自動梯基本上分為兩種：

自動開關控制

在自動梯的入口處安裝了感應器，當感應到有乘客走近，自動梯便會開始運行和完成整個運送過程。如過了一段時間也感應不到有其他乘客，便會停止運行。

自動兩速控制

如在一段設定的時間內感應不到有乘客，自動梯便會把速度減慢至緩慢運行速度。每當有乘客出現，自動梯便會將速度由慢行增加至額定速度。

Energy saving can be achieved by operating escalators only when passengers are present. Such kind of escalator systems is known as "service-on-demand" (SOD) escalators. SOD escalators are commonly adopted in some European countries and Japan.

There are basically two types of SOD escalators:

1) Auto on-off control

The escalator will stop when no passenger is detected for a preset period of time. It will start to run at normal speed once a passenger comes close.

2) Auto two-speed control

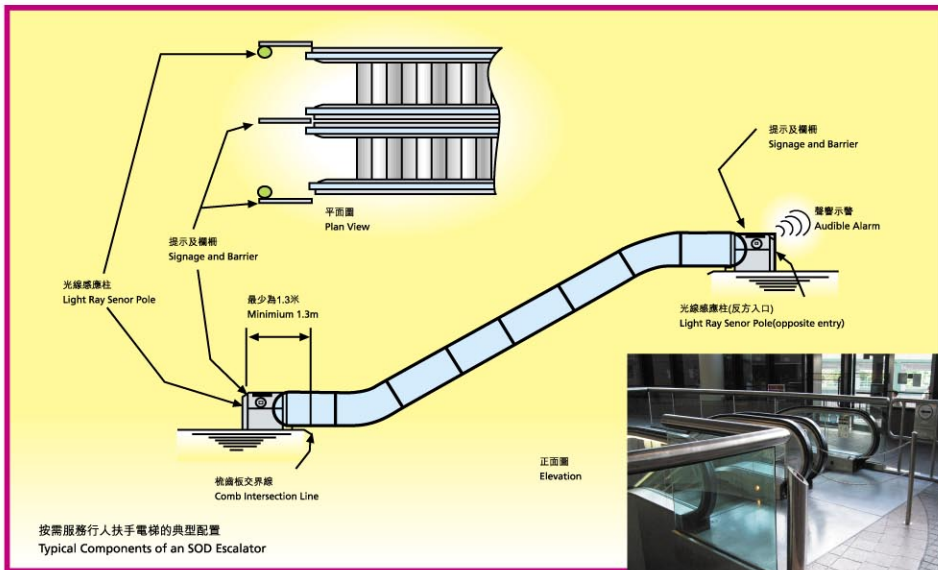
The escalator will run at low speed when no passenger is detected for a preset period of time. It will resume to normal speed once a passenger approaches.

由機電工程署出版的《升降機及自動梯設計及建造實務守則》，列載了具自動啟動及加速功能的自動梯須符合的規定。規定範圍包括啟動/加速、停止/減速的操作過程、感應器的距離、運行的方向、運行的時間和按需求服務的標記。

下圖列出按需求服務自動梯的基本裝置包括感應裝置、適當標記和欄柵。

Statutory requirements for escalators with the automatic starting and speed increasing function are stipulated in "The Code of Practice on the Design and Construction of Lifts and Escalator" published by EMSD. These requirements mainly govern the operation of the start/acceleration, stop/deceleration, distance between sensors, running direction, minimum running time and signage of SOD escalators.

The typical components of an escalator with SOD features including passenger detection sensors, suitable signage, and barriers are shown in the diagram below.



灣仔警察總部
Wan Chai Police Headquarters



荃灣政府合署
Tsuen Wan Government Offices

節能潛力

使用按需求服務的自動梯可節省多少能源視乎運載情況和使用地點而定。可節省的能源可因自動梯的使用率和位置而相差很遠。在私人辦公大樓、戲院、劇院、長時間使用的公共設施(如行人天橋)、教學大樓等，由於乘客的負荷量波動和不穩定，使用按需求服務的自動梯通常可提供較佳的節能機會。根據我們進行的研究，在一個政府辦公大樓內的自動開關和自動兩速自動梯，可分別節省52%和14%的能源。如需了解更多按需求服務自動梯的基本資料和如何以簡單方法評估現有自動梯的節能潛力可參閱已上載在機電工程署網頁的「按需求服務的自動梯資料小冊子」。

Potential Energy Saving

The amount of energy that can be saved by application of SOD control to an escalator largely depends on the traffic pattern and location of the escalator. The saving can vary significantly from one escalator to another. Application of SOD control to escalators in private office buildings, cinemas, theatres, long operating hour public facilities, education institutes etc. will have considerable saving opportunities due to the intermittent and fluctuating nature of the passenger load profile of these buildings. It was recorded that energy savings of auto on-off control and auto two-speed control SOD escalators in a government office building are 52% and 14% respectively. Detailed information on SOD escalators and energy saving estimation methodology are shown in "SOD Escalator Information Pamphlet" published by the EMSD, which can be downloaded from the EMSD's website.

其中一種數學模式可用來估計按需求服務自動梯可節省的能源便是波松分佈。波松分佈是用以模擬在特定的時段內發生的事件數目。其公式如下：

$$p(x, \lambda) = \frac{e^{-\lambda} \lambda^x}{x!} \text{ for } x = 0, 1, 2, \dots$$

λ 乃特定的時段內發生的事件數目平均數。

數學模式可用電腦和分解遞歸算法計算。

Mathematical models such as Poisson distribution can be adopted for estimation of the possible energy savings of SOD escalators.

The Poisson distribution is used to model the number of events occurring within a given time interval. The formula of the probability mass function is:

$$p(x, \lambda) = \frac{e^{-\lambda} \lambda^x}{x!} \text{ for } x = 0, 1, 2, \dots$$

λ is the average number of events in a given time interval.

The model can be implemented through computer programming and solved by recursion algorithm.

調校夏天室溫至 25.5°C - 的濕度考慮

Setting Room Temperature to 25.5°C in Summer - Humidity is not Forgotten!

自政府在2004年10月在各政府部門推動"調校夏天室溫至25.5°C"，我們都收到一些關於怎樣在這個溫度下控制濕度來保持舒適環境的詢問。這篇文章提供多一些有關這方面的資料。除室溫之外，相對濕度(RH)是另一影響人是否感覺舒適的參數。一個高室溫和高相對濕度的房間，會令在房內的人感到不舒適。但當我們推動"調校夏天室溫至25.5°C"這個口號時，我們是否忘記了濕度問題？答案是"沒有"。

讓我們用以下兩個圖去了解一個典型的空調過程。在夏天，熱的鮮風(約32°C和每千克空氣所含水份26克)會和回風混合形成大約26.8°C，每千克空氣含水份14.5克的混合風。混合風吹過冷卻盤管時同時被冷卻和抽濕至大約14°C，每千克空氣含水份9.5克，然後再被送進房間。在抽濕過程中混合風內的水份會凝結成冷凝水。冷凝水會被收集然後經水渠流走。供風和房間的空氣混合後再吸收房間內的人、照明和辦公室設備、電器和太陽光的顯熱和潛熱，從而達到25.5°C室溫和50%至60%相對濕度。

根據美國供暖製冷及空調工程師協會作出的研究，在正常情況下，九成的被訪者處於在一個溫度25.5°C和30%到60%相對濕度的環境下會感到舒適，然而有些人仍會覺得空氣悶熱。這樣的問題可以由空調系統的送風分佈着手以確保房間的供風分佈平均。供風分佈是舒適與否的關鍵。有些情況下，可使用風扇加強通風而不是降低室溫。

為達至最高節省能源，我們建議調校夏天室溫至25.5°C，而一般冷氣系統都能將相對濕度保持在50%到60%之間。配合政府推廣的夏天穿着輕便服上班的運動，公眾已逐漸接受25.5°C的建議了。

Since the Government initiated the energy saving measure, "Setting the Room Temperature to 25.5°C in Summer" to government departments in October 2004, there have been some enquiries on humidity control and human comfort at 25.5°C. This article provides some information on the relationship between these two aspects.

In addition to room temperature, the other environmental parameter that mostly affects human comfort is relative humidity (RH). It is widely known that occupants in a room will not feel comfortable if both the temperature and RH of that room are high. But have we forgotten the humidity when promoting the slogan of "Setting the Room Temperature to 25.5°C in Summer", the answer is "No".

Let us examine a typical air-conditioning process, as illustrated in the following 2 figures. In summer, the hot outdoor fresh air (around 32°C, 26g of moisture per kg of dry air) is mixed with the return air to form mixed air of around 26.8°C, 14.5g/kg moisture content. The mixed air is then blown across the cooling coil where it is simultaneously cooled and **dehumidified** to around 14°C, 9.5g/kg of moisture content before being supplied to the room. During the dehumidification process the moisture content of the mixed air condenses. The condensate is then collected and discharged into the drain. The supply air mixes with the room air and absorbs the sensible and latent heat from solar infiltration and the occupants, lighting and appliances in the room, thereby keeping the room condition at around 25.5°C, 50% to 60% RH.

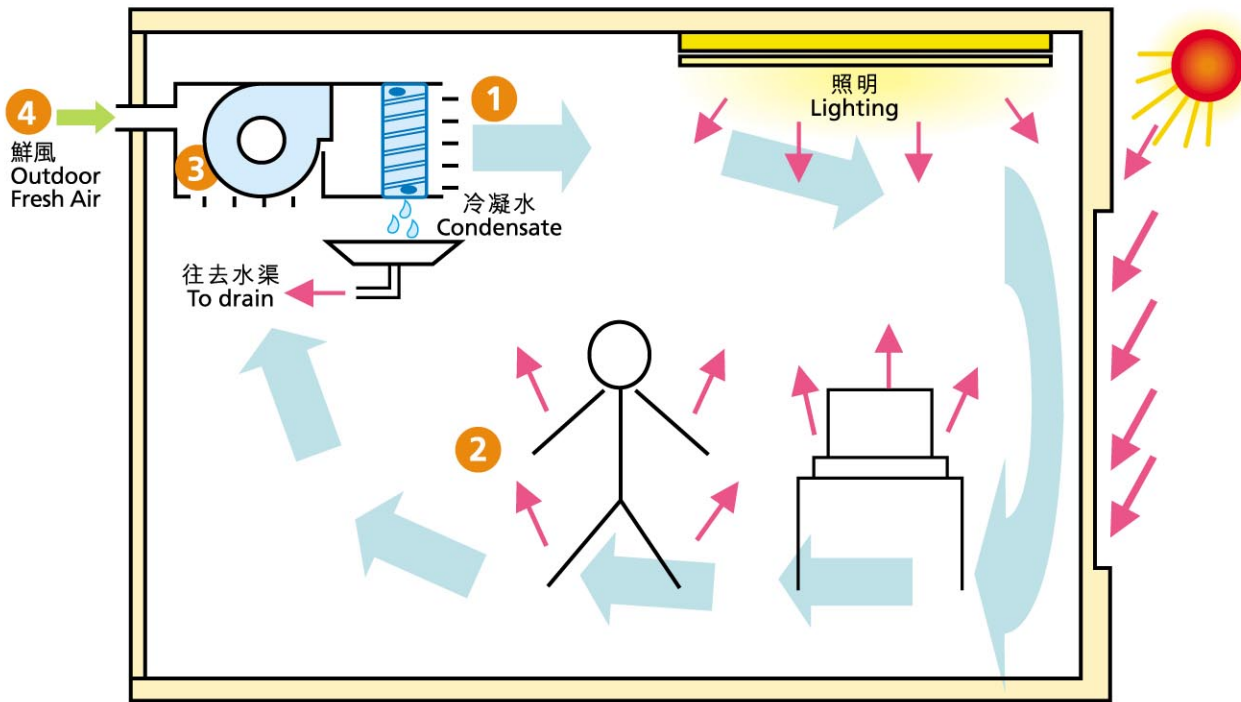
According to studies by the American Society of Heating, Refrigerating and Air-conditioning Engineers, under normal circumstances, 90% of the respondents will feel comfortable in a room with a temperature of 25.5°C and 30% to 60% RH. However, there are occasions when although the room temperature and RH are kept within the comfort zone, occupants may still find the air in the room stuffy. Such problem can be resolved by adjusting the ventilation control of the air-conditioning system such that adequate air is supplied to the occupied areas. Supply air distribution is often a key area that requires special attention. Under some circumstances, thermal comfort can be enhanced by using fans to improve ventilation instead of lowering the room temperature.

To maximize the energy saving, it is recommended to set the room temperature to 25.5°C, with the understanding that the relative humidity will be around 50% to 60% RH in a normal air-conditioning process. Indeed, in conjunction with the suggestion of dressing down in summer, the message has been gradually received by the public since its introduction.

典型空調系統

Typical Air-conditioning Process

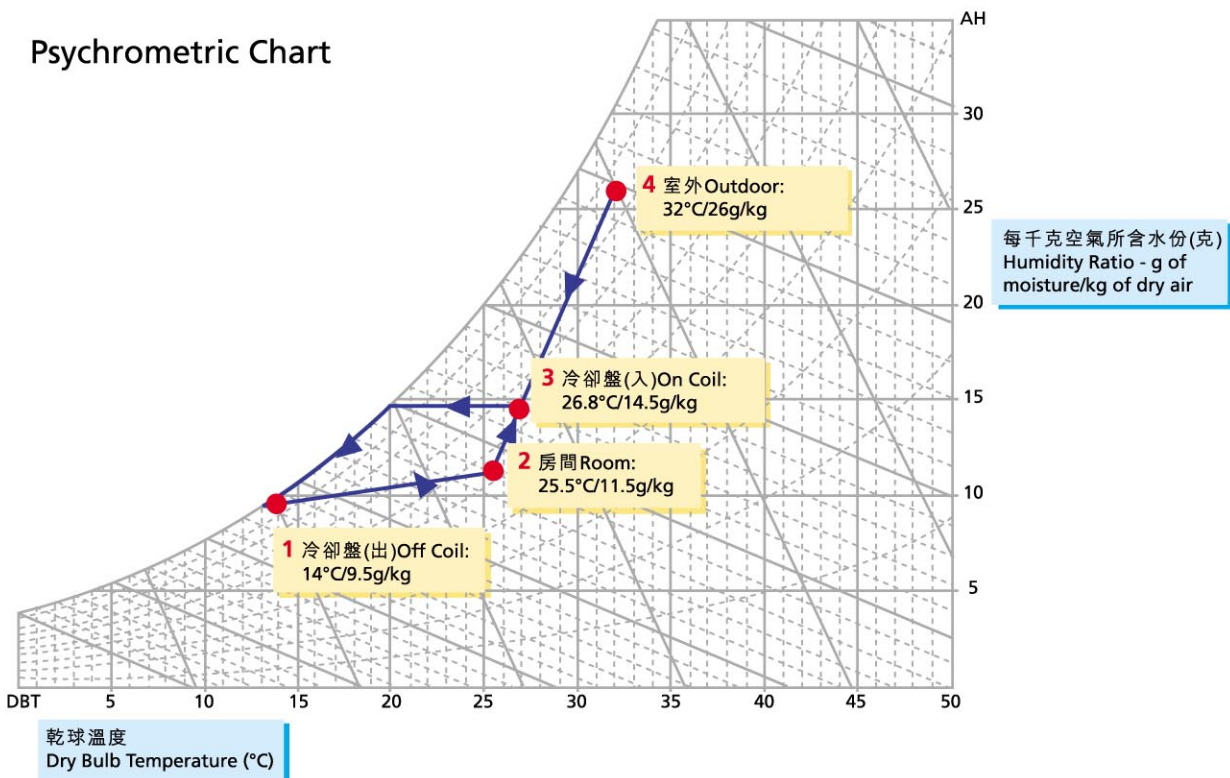
冷卻盤管具冷卻及抽濕功效
Cooling Coil for Cooling & Dehumidification



典型空調系統濕氣圖

Typical Air-conditioning Process on Psychrometric Chart

Psychrometric Chart

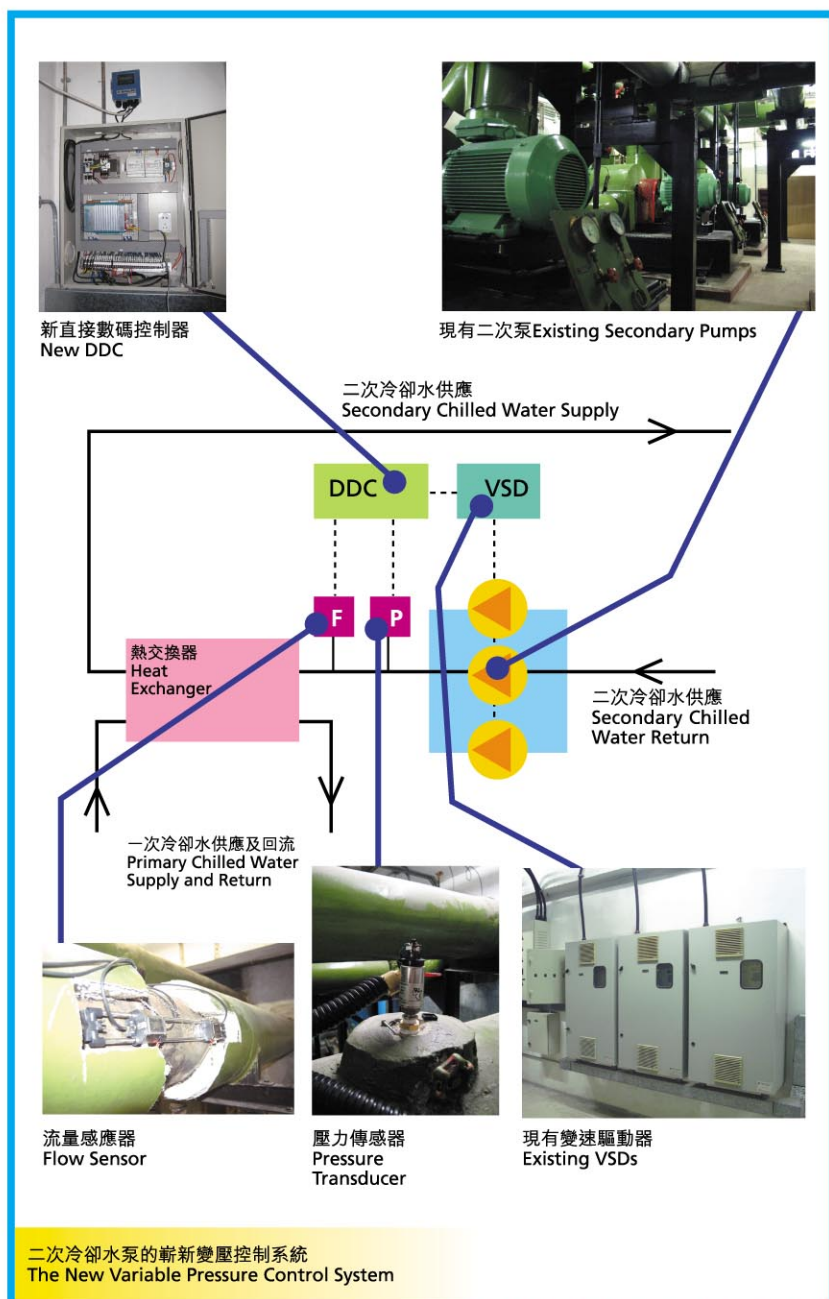


用於二次冷卻水泵的嶄新變壓控制器

An Innovative Variable Pressure Controller for Secondary Chilled Water Pumps

機電工程署最近在一幢政府合署安裝了嶄新的變壓控制器，該控制器採用先進控制程序控制二次冷卻水泵，是政府建築物首台同類裝置。香港常見的二次冷卻水迴路控制方式是利用變速驅動器控制水泵馬達，隨冷卻水需求的變化保持水泵出入的壓力差固定。新的控制程序則量度二次冷卻水迴路的即時流量及水頭壓力。壓力設定值是根據預測的系統曲線計算出來。每套裝置的預測系統曲線都會不同，需由精確的測試及校驗過程求得。預測系統曲線顯示冷卻水迴路的流量及壓力之間的關係。計算到的壓力設定值會用來控制變速驅動水泵的速度。

在這政府合署的工程中，有三台變速水泵分配冷卻水給33至47樓使用。變速驅動器由現有的直接數碼控制器按固定壓力差設定值控制。我們加裝新的直接數碼控制器，以採用新的控制程序來進行變壓控制。初步的實地測量顯示可在天氣冷的日子省回不少能源。在供風端維持足夠的冷卻能力下，我們觀察到新控制程序把兩個主水泵設定按16赫茲(Hz)操作，而原有的固定壓力差控制器則把相同的變速驅動水泵設定按30至37赫茲(Hz)操作。水泵消耗的能源減少達75%。不過，我們需要收集更多數據，以評估新的控制系統在天氣熱而負荷未滿的情況下的表現。



EMSD has recently installed an innovative variable pressure controller that adopts a state-of-the-art control algorithm for the secondary chilled water pumps in a government office building. This installation is the first of its kind in government buildings.

The typical control mechanism of a secondary chilled water pump circuit in Hong Kong involves the use of a variable speed drive to control the pump motor while maintaining a constant differential pressure

across the pump set under different chilled water demands. The new control algorithm, however, measures the real time flow and head pressure of the secondary chilled water circuit. The pressure set point is varied and calculated according to a site specific and predicted system curve which is obtained during a precise testing and commissioning process. The predictive curve is an estimate of the relationship between the flow and pressure characteristics of the chilled water circuit. The calculated pressure set point is used to control the speed of the variable speed drive pump.

In the EMSD's pilot project, there are three variable speed pumps distributing chilled water from 33/F up to 47/F floor. The variable speed drives are controlled by an existing direct digital controller (DDC) based on a constant differential pressure setting. A new DDC controller is added to implement the new control algorithm for variable pressure control. The preliminary site measurements revealed considerable energy savings under cold weather conditions. At one time it was observed that while maintaining sufficient cooling capacity on the air side, the new control algorithm set the two duty pumps to work at about 16 Hz whereas the original constant differential pressure control would set the same VSD pumps to operate at 30 - 37 Hz. Up to 75% of pump energy could be saved. More operational data are being collected for the evaluation of the performance of the new control system during part load summer conditions.

Q= 流量 Flow rate

f = 變頻器輸出頻率 VSD output frequency

H = 泵壓 Pump head

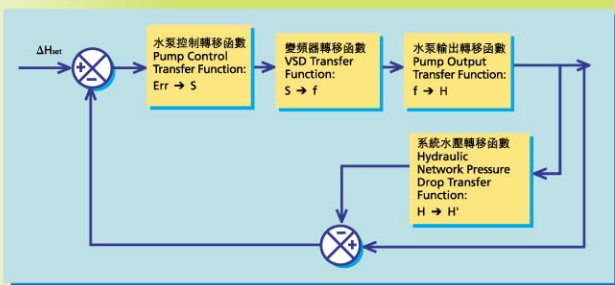
H_p = 預測泵壓 Predictive pump head

ΔH_{set} = 差壓定點 Differential pressure set point

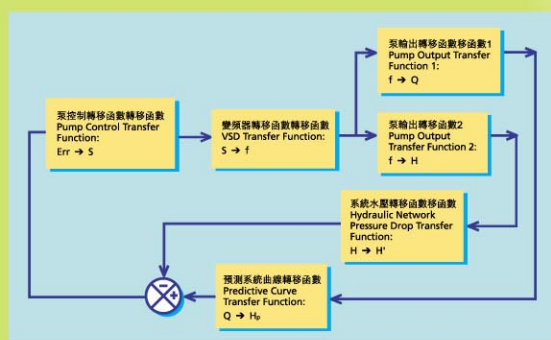
H' = 入泵前水壓 Hydraulic pressure before entering pump

S = 類比訊號 Analog control signal

Err = 相差 Error



圖示傳統定壓二次冷卻水泵控制系統
Conventional Constant Differential Pressure Secondary Chilled Water Pump Control Diagram



圖示創新的非固定水泵壓力的二次水泵控制系統
Innovative Variable Pressure Secondary Chilled Water Pump Control Diagram

「發光二極管」的節能應用範疇

Energy Efficient Applications of LED

隨著近年來科技的進步，「發光二極管」的很多優點，都得到充分發揮；由於耐用和色彩變化萬千，加上低耗電量，使它的應用層面越見廣泛。雖然「發光二極管」的能源效益，目前還未達熒光管的水平，因而沒有被應用於一般照明，但我們仍能找到很多可節省能源的應用範疇。

效能

表一列出了不同顏色的「發光二極管」和其他常用燈泡的「燈光效率」以作比較。值得我們留意的是「發光二極管」的「燈光效率」正持續提升。

With the advancement of LED technology in recent years, the use of LED lamps has become more widespread and popular due to its long service life, versatile colour changing ability and low power consumption. LED is not suitable for replacing the fluorescent tubes in general lighting because fluorescent tubes are more energy efficient, but LED can be energy efficiently used in other lighting applications, including exit signs, traffic lights and projectors.

Efficiency

The typical luminous efficacy of LEDs of different colours as compared with that of conventional lamps is shown in Table 1. It is worth noting that the luminous efficacies of LEDs have been improving steadily.

光源 Light Source		燈光效率 Luminous Efficacy (流明/瓦 lumen/watt)
一瓦高功率 「發光二極管」 High Power 1W LED	紅 RED	37
	橙紅 RED-ORANGE	48
	黃 AMBER	37
	綠 GREEN	40
	青 CYAN	34
	藍 BLUE	12
	白 WHITE (配熒光料 phosphors-converted)	34
	白 WHITE (混色 colour blending)	30
白熾燈 Incandescent lamp (25瓦W)		9
T8 熒光燈 Fluorescent Lamp (18瓦W)		70
T5 熒光燈 Fluorescent Lamp (14瓦W)		90
綜合式緊湊型熒光燈 Integrated Compact Fluorescent Lamp (11瓦W)		55
綜合式無極感應燈 Integrated Induction Lamp (23瓦W)		70

表一：各類光源的「燈光效率」比較一覽表 Table 1: Comparison of the Luminous Efficacy of Different Lamp Types

出路指示牌 Exit Sign



「發光二極管」出路指示牌 — 可節省80%能源

LED Exit Signs - save 80% energy

一個「發光二極管」出路指示牌成本

Estimated cost for one typical LED exit sign: \$650

每年節省電費 Annual energy saving: \$220

回本期 Simple payback: 3 years

交通燈 Traffic Light



「發光二極管」交通燈 — 可節省70%能源

LED Traffic Light - Save 70% energy

一個「發光二極管」交通燈成本

Estimated cost for one set of traffic lights: \$5,000

每年節省電費 Annual energy saving: \$1,100

回本期 Simple payback: 4.5 years

淡水冷卻塔先行性計劃一

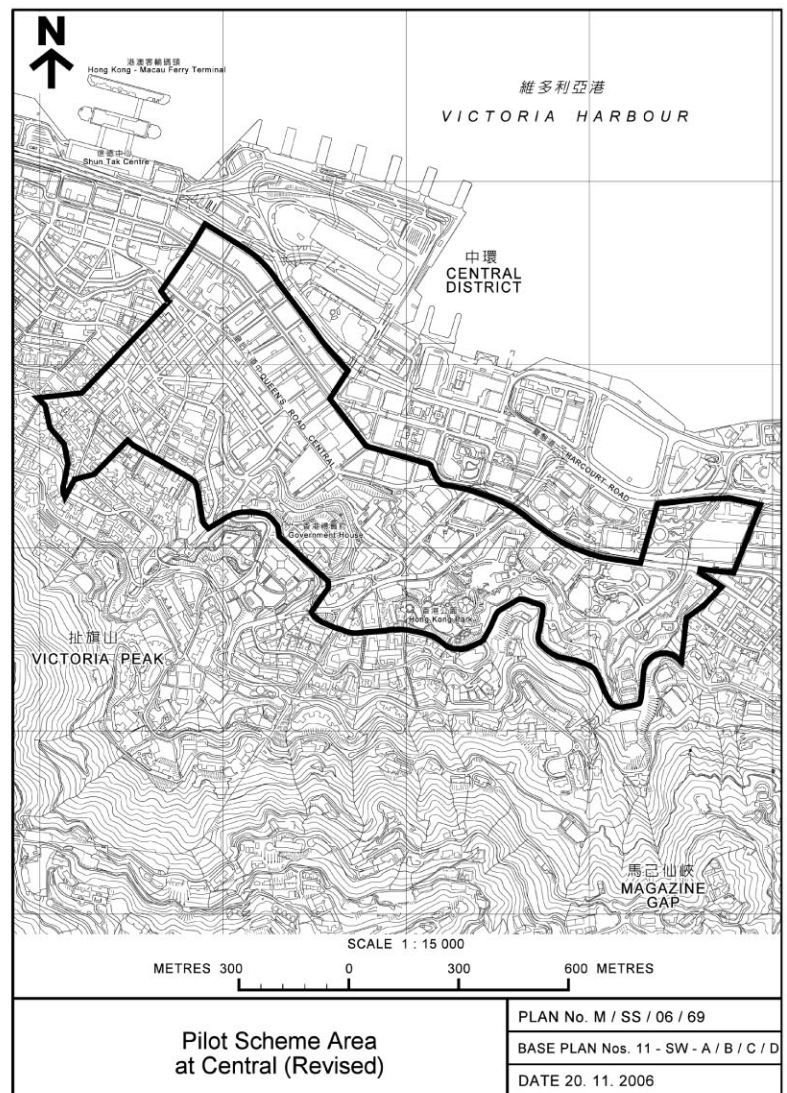
中環區指定範圍得以擴大

Pilot Scheme for Fresh Water Cooling Towers -

Expansion of the Central Designated Area

基於對先行性計劃不間斷的檢討，至2006年年底，冷卻塔先行性計劃中的指定範圍已逐步增加至79區〔附註〕。為應在中環區商業樓宇業主對參與計劃的渴求，在2006年12月，我們已成功安排將中環區指定範圍擴大。所擴大的範圍涉及的非住宅樓面面積多於50萬平方米，可減省每年用電量達1仟4佰萬度。在中環區指定範圍擴大後，我們即時接獲6個有關在這次擴大範圍內參加先行性計劃的查詢。在該指定範圍內其他商業樓宇擁有人現應把握機會計劃改裝現有的氣冷式系統至水冷式系統。

As a result of the continuous review of the Pilot Scheme, the designated areas of the Scheme were expanded gradually to 79 [Note] in end 2006. In response to the aspiration from the commercial building owners in Central District in joining the Scheme, we managed to expand this designated area in December 2006. This enlargement involves more than 500,000 m² of non-domestic gross floor area and has the highest potential energy saving, among other designated areas, of about 14 million kWh per year. Immediately after the expansion, six enquires on joining of the Scheme in this enlargement area were received. Many other commercial building owners within the designated area are now encouraged to plan the conversion of their existing air-cooled systems to water-cooled systems.



先行性計劃的中環指定範圍
Designated Area of Central under the Pilot Scheme

〔附註〕至2007年2月，先行性計劃共接獲259個申請及共有71個涉及提供40萬千瓦的製冷量的裝置已完成並投入運作。預計每年可減省用電及減少排放溫室氣體分別達6仟2佰萬度和4萬3仟噸。

[Note] Up to February 2007, 259 no. of applications were received and 71 installations with a total cooling capacity of 400,000 kW have been completed and put into operation. The estimated energy saving and the associated reduction of greenhouse gas are 62M kWh per annum and 43,000 tonnes per annum respectively.

綠化辦公室 設備能效指南

Guide for Energy Efficient

Green Office Equipment

採購能源效益產品是重要的行動幫助減低能源消耗、節省能源及保護環境，亦是作為政府持續推廣善用和節省能源的一項措施。為配合政府建議的「綠色」措施，最近機電工程署製作了新的刊物《綠化辦公室設備能效指南》，提供指引及節能要訣，讓用者有效採購環保辦公室器材。

印製這指南旨在幫助消費者採購具能源效益的辦公室設備，包括多功能辦公室設備、影印機、鐳射打印機、電視機、傳真機、電腦及液晶顯示器。這小冊子亦提供各種辦公室設備的節能要訣，以提高消費者對綠色辦公室的意識。此外，透過這指南讓讀者了解有關產品在「能源效益標籤計劃」下的節能要求。

具能源效益的辦公室設備可透過電能管理功能節省電力。指南列出不同辦公室設備在靜止模式的耗電量。普遍來說，選用具能源效益的辦公室設備，每年可減少大約50%在靜止時所用的電能。

As part of the government's on-going efforts to promote the efficient use and conservation of energy, procurement of energy efficient products is an important step on lowering the energy consumption, conserving energy and protecting the environment. To incorporate the green measures proposed by the Government, EMSD has recently published a new promotion booklet - "Guide for Energy Efficient Green Office Equipment" which provides guidelines and energy saving tips to users in choosing energy efficient office equipment.

This Guide is published to help consumers to choose energy efficient office equipment including multifunction devices, photocopiers, laser printers, television sets, fax machines, computers and LCD monitors. Various tips on using office equipment efficiently and economically are introduced in this booklet to promote the green office concept. In addition, the Guide provides readers more information on the technical requirements specified in the Energy Efficiency Labelling Scheme.

Energy efficient office equipment can save electricity through special power management features. The

Guide compares the power consumption of various types of office equipment when the equipment is in its "sleep" mode. In general, using energy efficient office equipment can reduce annual electricity cost at inactive stage by about 50%.



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

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

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