機電工程署規管服務 2005 年業務概覽
Electrical and Mechanical Services Department
Regulatory Services – Achievements Overview 2005

機電工程署
EMSD

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抱負 Vision

我們的抱負，是要成為促使香港在機電安全及善用能源方面，都達到世界首要都會水平的政府機構。

Our vision is to be the government agency that makes Hong Kong a top-ranking city in E&M safety and in the utilisation of energy.

使命 Mission

我們的使命，是確保機電及能源科技均以安全、可靠、經濟及環保的方式得以善用，並藉此促進社會的安全及提升生活質素。

Our mission is to enhance the safety and the quality of life of our community by ensuring that E&M and energy technologies are harnessed in a safe, reliable, economical and environment-friendly manner.

信念 Values

- 專業才能 Expertise
- 誠信 Integrity
- 可靠 Reliability
- 承擔 Commitment

重要活動
Achievements and Initiatives

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1 支持可持續發展

作為政府在可再生能源方面的技術顧問，我們全力協助政府制訂《香港首個可持續發展策略》，並在年內把這份報告所載的一些主要措施付諸實行，包括制訂有關在政府建築物安裝可再生能源設施及開放現有的電網予小型可再生能源裝置的政策。

在節約能源方面，我們準備就雪櫃、冷氣機及緊湊型熒光燈(即慳電膽)這3類產品推出強制性能源效益標籤計劃。這項措施突顯政府擬透過立法方式落實節能政策的決心。

Supporting Sustainable Development

As the government's technical advisor on renewable energy, we contributed to the development of the first sustainable development strategy for Hong Kong and were instrumental in putting some of its key initiatives into action during the year. These included the formulation of a policy for the installations of renewable energy facilities as part of government buildings and the opening up of existing electricity grids to small-scale renewable energy installations.

As to energy conservation, we are ready for the introduction of the mandatory energy efficiency labelling scheme for refrigerators, room coolers and compact fluorescent lamps – an initiative signifying government's commitment to mandating energy conservation into legislation.

2 以新總部作為典範

我們在九龍灣的新總部是可持續發展的最佳例證。我們把前空運貨站大樓改建成總部大樓，並保留了原有大樓大部分鋼筋混凝土結構。改建工程為我們節省了高達7億元的能源及建築材料，並減省大量建築廢料。

此外，我們在總部大樓展示最新的節能及可再生能源科技。其中環保設施包括天台的太陽能光伏板系統及以氨作為製冷媒體的水冷式製冷機，這兩項裝置均是本港同類裝置中最大型的。

New Headquarters as Role Model

Our new headquarters in Kowloon Bay exemplifies sustainable development at its best. Converting it from a former cargo terminal building and retaining most of the original concrete and steel structure, we realised savings of up to $700 million in energy and construction materials and eliminated a great deal of construction waste.

Moreover, the headquarters building is a showcase of the latest in energy efficiency and renewable energy technologies. Among its environmentally friendly features are a rooftop solar photovoltaic system and a water-cooled air-conditioning chiller plant using ammonia as refrigerant, each the largest of its kind in Hong Kong.

3 為保障公眾安全默默耕耘

年內，香港盛事連連，其中包括香港迪士尼樂園開幕以及香港主辦世界貿易組織「第六次部長級會議」，備受矚目。我們為這些盛事默默耕耘，竭力保障香港市民的安全。

在香港迪士尼樂園投入運作的初期，我們調派一支隊伍長駐樂園，在樂園的營業時間以外為機動遊戲機進行檢查，並處理運作初期出現的問題。

香港特別行政區政府成功舉辦世界貿易組織「第六次部長級會議」，受到各方讚賞。作為緊急應變小組的成員，我們負責規管電力、氣體及石油供應的安全及保安事宜，並在會議舉行期間設立一個全日24小時運作的控制中心，以及調配員工隨時候命。

Assuring Public Safety from behind the Scenes

We worked hard to safeguard the Hong Kong community during a year of high-profile events, among them the opening of Hong Kong Disneyland and the hosting of the World Trade Organisation Sixth Ministerial Conference.

In Disneyland's first few months of operation, we kept a team on-site to carry out after-hours inspections of the amusement rides and attend to teething problems.

The SAR government was highly praised for its handling of the WTO conference. As part of the emergency response team, we took regulatory responsibility for the safety and security of the electricity, gas and oil supply, setting up a 24-hour control centre with staff on standby throughout the conference period.

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4 優質服務獲各界嘉許

我們的優質服務獲得政府及市民大眾嘉許。我們在2005年公務員優質服務獎勵計劃中贏得兩個獎項，其中一個是聯同其他政府部門贏得的「部門合作獎」冠軍；另外一個是「專門服務獎」優異獎，表揚我們在推廣電力安全方面的成績。

我們更收到葵青區議會寄來的感謝信，讚揚我們在葵芳閣停電期間所作的努力。我們的調查隊伍在現場為受影響的居民提供協助，並與有關的承辦商及電力公司作出協調，使屋苑盡快恢復電力供應。

Quality Service Recognised

Our quality service was recognised by the government and the community. We won two awards at the Civil Service Outstanding Service Award Scheme 2005: the Champion award for a joint project with other government departments, and a Merit award in specialised service for promoting electrical safety.

We also received a letter of appreciation from the Kwai Tsing District Council, praising our efforts during the Kwai Fong Terrace power interruption. Our investigating team worked on-site to assist affected residents and coordinate with the contractor and the power company on the resumption of the electricity supply.

5 氣體事故數目下降

自1997年起，氣體喉管損毀事故的數目逐步減少，主要原因是我們加強了規管工作。2005年，氣體喉管損毀事故數目較2004年減少差不多40%。我們在屋邨進行的社區宣傳活動也取得滿意成果，在屋邨發生氣體喉管損毀事故宗數由2004年的6宗減至2005年的3宗。

在過去數年，一般氣體事故數目亦不斷減少。

Gas Incidents in Decline

The number of incidents of damage to gas pipes has been steadily decreasing since 1997, due largely to enhancements in relevant regulations. An almost 40 per cent drop in incidents was recorded in 2005 compared to 2004. Our community outreach programme with housing estates also paid off with gas pipe damage incidents occurring at housing estates falling from six in 2004 to only three in 2005.

The number of gas incidents in general has also followed a downward trend in the past few years.

6 社區宣傳活動

我們在總部大樓闢設以學生及市民大眾為對象的教育徑，展示在香港節約能源及使用可再生能源的最佳例子，並介紹我們在電氣、氣體和機械安全方面的規管工作。

一年一度的「機電安全香港通」運動是我們最重要的公眾教育活動之一。這是我們與業界主要機構合辦的運動，內容包括各類社區及宣傳活動。我們舉辦的學校活動亦備受歡迎，接觸逾80,000名幼稚園及大中小學學生。

Community Outreach

An education path has been set up within our headquarters, targeting students and members of the public. It showcases best practices in energy conservation and renewable energy in Hong Kong and highlights our regulatory functions in electrical, gas and mechanical safety.

The annual E&M Safety Campaign, a strategic collaboration between EMSD and key industry players that features a mix of community and media activities, continued to be one of our most important public education initiatives. Our school programme was also well received, reaching more than 80,000 students at pre-school, primary, secondary and university levels.

高層管理人員
Senior Management

吳鴻成
Ng Hung-shing, Robin

陳帆
Chan Fan, Frank

何光偉太平紳士
Ho Kwong-wai, JP

黎仕海太平紳士
Lai Sze-hoi, Roger, JP

黃達平
Uy Tat-ping

莊國輝
Chong Kwok-fai, Bernard

署長
Director

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機電工程署署長
Director of Electrical and Mechanical Services

副署長
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Assistant Director / Gas & General Legislation

秘書
Secretary

莊國輝
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主任秘書
Departmental Secretary

會計師
Accountant

吳鴻成
Ng Hung-shing, Robin
部門會計師
Departmental Accountant

署長的話
Message from the Director

> 我們預期香港的可持續發展在來年更上一層樓。
> We expect Hong Kong's push towards sustainable development will gain further momentum in coming years.

政府為可持續發展制訂指令

在提倡能源效益、可再生能源技術及可持續發展方面，2005年對我們來說是一個重要里程碑。

首先，幾項相關的政府政策及指令現已實施。正如行政長官的施政綱領所述，香港特別行政區政府建議推行強制性能源效益標籤計劃。這突顯了政府在推廣能源效益上的努力和承諾，並擬透過立法方式落實節能政策。此外，我們已向政府各局和部門發出一份技術通告，提倡在政府工程項目及裝置採用節能設施及可再生能源技術。這有助進一步推動我們這方面的工作，並賦予我們就技術事宜提供意見及監察工程進度的責任。

《香港首個可持續發展策略》發表後，我們一直協助推行報告所載的一些主要措施，包括為現有的電力網絡開放給可再生能源供應商事宜進行籌備工作，並制訂有關在政府建築物及公共工程項目安裝可再生能源設施的政策。

第二份電力市場檢討諮詢文件建議，兩間電力公司應讓小型可再生能源發電系統與電網接駁，這樣，電網的電力供應便可由可再生能源資源補充。這項建議如能付諸實行，可為有興趣建立這類系統的機構提供誘因。能源效益事務處就小型可再生能源發電系統與電網接駁事宜已制訂技術指引，有助推廣有關計劃。

上列政府政策及指令既已落實，我們預期香港的可持續發展在來年更上一層樓。

新總部標誌著新的里程碑

我們在九龍灣的新總部採用了最新的節能及可再生能源技術。新總部的主要設施包括天台的太陽能光伏板系統、以氨作為製冷媒體的水冷式製冷機，以及為預先冷卻新鮮空氣進氣量而設的熱輪系統。我們藉着這些設施累積實際的操作經驗，這些經驗有助我們在公營及私營機構推廣應用節能及可再生能源技術。

Government Directives Set for Sustainable Development

2005 was a milestone year for our promotion of energy efficiency and renewable energy technologies and sustainable development.

First of all, a number of relevant government policies and directives are now in place. As outlined in the Chief Executive's policy agenda, the Hong Kong SAR government has proposed the introduction of a mandatory energy efficiency labelling scheme. This signifies government's on-going energy efficiency drive and also its commitment to mandating it into legislation. Furthermore, a technical circular was issued to all government bureaux and departments in support of the adoption of energy efficiency features and renewable energy technologies in government projects and installations. This adds impetus to our efforts and entrusts us with providing advice on technical matters and monitoring project progress.

Following the publication of the first sustainable development strategy for Hong Kong, we have been helping to implement some of its key initiatives. These included preparations for the opening up of existing electricity grids to renewable energy suppliers and the formulation of a policy for the installation of renewable energy facilities in government buildings and public projects.

The second consultation document on the electricity market review stipulated that the two power companies should be required to allow "grid connection" for small-scale renewable energy power systems. If this comes about, it will provide an incentive for those interested in setting up such systems, letting the renewable energy output supplement the grid supply. The technical guidelines on grid connection prepared by our Energy Efficiency Office will be instrumental in the implementation of this initiative.

With the backing of these government policies and directives, we expect Hong Kong's push towards sustainable development will gain further momentum in coming years.

New Headquarters as Milestone Initiative

Our new headquarters in Kowloon Bay is a showcase of the latest in energy efficiency and renewable energy technologies. Among its key features are a rooftop solar photovoltaic system, a water-cooled air-conditioning chiller plant using ammonia as refrigerant, and heat wheel systems for pre-cooling of fresh air intake. With these features, we are accumulating practical operational experience that is proving invaluable as we continue to promote such applications to the public and private sectors.

署長的話
Message from the Director

新總部也為我們舉辦的社區教育活動提供一個理想平台。我們特意在總部大樓闢設教育徑，並為訪客提供導覽服務。教育徑由地下的互動式展覽館一直延伸至天台的觀景台。

總部大樓本身並非新建的。我們其實是把前空運貨站大樓改建而成，並保留了原有大樓大部分鋼筋混凝土結構。改建工程能減省能源消耗量及所需的建築材料，並可減少大量建築廢料，為我們節省高達7億元的工程費用。總部大樓是可持續發展的最佳例證。

取得市民及業界的支持

在2005年，市民節約能源的意識不斷提高，而且對節能事宜愈來愈關注。

對於政府提倡把空調室溫調節至攝氏25.5度，市民反應熱烈。我們對此感到份外高興，因為我們不但全力支持這項計劃，而且製作了一系列宣傳單張及電視宣傳短片，向市民大眾宣揚把空調室溫調節至攝氏25.5度的信息。

年內，私營機構也對節約能源表示支持。他們對冷卻塔先行性計劃的反應尤其熱烈，在2005年，我們收到71宗新申請，較2004年的累積申請數目增加55%。

充實的一年

2005年，香港盛事接踵而來。

隨着香港迪士尼樂園開幕，香港又增添了一個旅遊景點。我們一直在幕後默默耕耘，密切監察有關的安全事宜。在樂園投入運作的初期，我們一支派駐樂園的隊伍辛勤工作，為樂園的機動遊戲機進行檢驗，並處理在運作初期出現的問題。

12月，香港舉行世界貿易組織「第六次部長級會議」。這項盛事成為市民及國際傳媒的焦點。香港特別行政區政府為會議進行的籌備工作及處理場外保安事宜的做法受到高度評價。作為緊急應變小組的成員，我們專責規管電力及氣體供應的安全及保安事宜。我們與電力、氣體及油公司作出協調，並在我們的總部設立一個全日24小時運作的控制中心。此外，我們也在會議舉行期間調配員工隨時候命。

改善管理程序

年內，我們向業界進行了一項全面的意見調查，以蒐集他們對我們規管服務及宣傳活動的意見。調查結果有助我們找出須要提高效率和績效的範疇。在11月出版的《氣體快訊》就是我們因應調查報告的建議而推出的刊物。

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1. *我們位於九龍灣的新總部大樓採用多項環保設施，其中包括天台的太陽能光伏板系統，為本港同類裝置中最大型的。*
   The rooftop solar photovoltaic system, the largest of its kind in Hong Kong, is among the various environmentally friendly features of our new headquarters in Kowloon Bay.

2. *總部大樓為我們舉辦的社區教育活動提供一個理想平台。*
   Our headquarters provides an ideal platform for our community education activities.

3. *我們的總部大樓由前空運貨站改建而成，是可持續發展的最佳例證。*
   Converted from a former cargo terminal building, our headquarters exemplifies sustainable development at its best.

The headquarters also provides an ideal platform for our community education activities. It was no accident that we set up an education path within the building, with a tailor-made guided tour that takes visitors from an interactive exhibition gallery on the ground floor to a rooftop viewing gallery.

The new headquarters is not "new" per se as it was in fact converted from a former cargo terminal building, retaining most of the concrete and steel structure. Savings of up to $700 million were realised as this conversion reduced the energy and construction materials needed and eliminated a great deal of construction waste. The building exemplifies sustainable development at its best.

Garnering Support from the Public and the Trade

With regard to energy conservation, the year 2005 witnessed growing public awareness and enthusiasm.

Government's call for people to set the air-conditioned room temperature to 25.5°C was extremely well received. This was especially gratifying for us, as we had given our full support to the campaign and developed a series of promotional leaflets and video commercials to convey the 25.5°C message to the community.

The private sector also expressed its support for energy conservation during the year. This is particularly evident in the response to the Cooling Tower Pilot Scheme; 71 new applications were received in 2005, representing a 55 per cent increase over the cumulative applications in 2004.

Eventful Year

2005 was also a year of high-profile events in Hong Kong.

With the opening of Hong Kong Disneyland, Hong Kong has again expanded its impressive list of tourist attractions. We have been working behind the scenes, keeping a close eye on safety matters. During the park's first few months of operation, our on-site team worked very hard to carry out inspections of the amusement rides and attend to teething problems.

The World Trade Organisation Sixth Ministerial Conference held in Hong Kong in December drew much attention from the public and media worldwide. The SAR government was highly praised for its preparation for the conference and its handling of security issues outside the conference venue. As part of the emergency response team, we took regulatory responsibility for the safety and security of the electricity and gas supply. We coordinated with the electricity, gas and oil companies, set up a 24-hour control centre at our headquarters, and had staff on standby throughout the conference period.

Strengthening Management Procedures

During the year, we undertook a comprehensive survey of the trades, collecting their views on our regulatory service and communications programmes. The survey findings helped us identify areas for effectiveness and efficiency improvements. In fact, the *Gas Safety Bulletin* trade newsletter introduced in November was created in response to recommendations made in the survey report.

署長的話
Message from the Director

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另一項管理措施是整合我們的事故匯報系統。我們擬定了一個新框架，就機電工程署轄下三個核心規管服務範疇(即機械、電氣及氣體安全)發生的事故進行分析。這個框架所強調的一致性使我們可以更有效地分析事故數據，而更重要的是，我們可透過這個框架就事故受害者及肇事者的資料作出統計，從而協助我們找出易受傷害或高危的組別，並制定各項以他們為對象的預防措施及安全教育活動。

教育年青一代

青少年依然是我們舉辦教育活動的主要對象。為迎合他們的口味和興趣，我們進一步利用科技及互聯網為青少年舉辦各項活動，「安全樂園」就是其中一項。這個新網站包含互動遊戲，旨在推廣安全使用機動遊戲機的信息。此外，我們也舉辦了一個網上機電安全常識問答比賽，吸引了約60,000名小學生參加。

除了為電腦科技一族設計活動外，我們繼續在學校裏安排各項講解機電安全及節約能源的活動。去年有超過80,000名幼稚園及大、中、小學學生參予過這些活動。一年一度的「機電安全香港通」運動是我們最重要的活動之一，這項運動旨在提高市民對機電安全及能源效益的意識。

2005年是令人難忘的一年，因為這年我們全力協助政府實施節約能源及可持續發展策略，成績斐然。2005年也是令人振奮的一年，因為香港在這年盛事連連，國際矚目。我們規管服務隊伍的每名員工為這些盛事努力工作，並享受辛勤工作帶來的滿足及成就感。他們克盡己任、不遺餘力的服務精神令本人十分欽佩，相信他們的表現也會贏得全港市民的讚賞。

最後，對副署長／規管服務何光偉先生及其隊伍在過去一年克盡厥職，表現卓越，本人謹此致謝。

黎仕海

機電工程署署長

黎仕海

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1. *在總部大樓闢設教育徑，旨在提高訪客對能源效益、可再生能源，以及電氣、氣體和機械安全的知識。*
   The education path at our headquarters is designed to enhance visitors' understanding of energy efficiency, renewable energy, as well as electrical, gas and mechanical safety.

2. *年內，香港盛事連連，其中包括香港迪士尼樂園開幕。我們為這些盛事默默耕耘，竭力保障香港市民的安全。*
   We have been working behind the scenes to safeguard the Hong Kong community during a year of high-profile events — among them the opening of Hong Kong Disneyland.

3. *一年一度的「機電安全香港通」運動一直是我們最重要的公眾教育活動之一。*
   The annual E&M Safety Campaign continues to be one of our most important public education initiatives.

Another management initiative was the consolidation of our incident reporting. A new framework was devised for incident analysis across the three core regulatory areas under EMSD, namely, electrical, mechanical and gas safety. It emphasises consistency to help us analyse incident data more efficiently and effectively. More importantly, it provides insights into the demographics of incident victims and perpetrators, enabling us to identify vulnerable or high-risk groups for more targeted precautionary measures and safety education.

Education for the Young

Young people remained the primary target of our education programmes. To better suit their tastes and interests, we have expanded the use of technologies and the Internet in our activities designed for the young: "Safepark", a new website featuring interactive games, was launched to promote the safe use of amusement rides, and a web-based E&M safety quiz was held, attracting some 60,000 primary students.

Alongside programmes tailored for the "techie" generation, we also continued with other, more established activities, including the ever-popular school outreach programmes, which touched over 80,000 students at pre-school, primary, secondary and university levels during the year. The annual E&M Safety Campaign continued to be one of our most important initiatives in raising public awareness of electrical and mechanical safety as well as energy efficiency.

The year 2005 will be remembered as a milestone in our contribution to the government's enthusiastic implementation of the strategic roadmap on energy conservation and sustainable development. It will also be remembered for the events that brought international attention to Hong Kong – particularly given the hard work of each and every member of the Regulatory Services team and the associated sense of achievement that they experienced as a result. Their dutiful service and relentless effort have earned my respect, and, I trust, that of the people of Hong Kong.

Last but certainly not least, I would like to thank our Deputy Director of Regulatory Services, Mr K W Ho, and his team for their work in the past year.

Roger S H Lai
Director of Electrical and Mechanical Services

業務回顧
Operations Review

> 我們特別感到欣慰的是，我們的優質服務獲得市民大眾嘉許。
> It is particularly heart-warming when our quality service is recognised by the community.

誠如署長所言，在2005年，香港盛事連連，機電工程署員工也得加倍努力以作配合。我們喜見所作的努力沒有白費。我們所提供的優質服務以及對可持續發展的貢獻備受讚賞。

我們以「走向社群，安居節能」作為這刊物的主題，正好道出我們的工作方針。

走向社群

新總部大樓正是我們走向社群的首要例子。總部大樓不但為員工提供一個現代化、高科技和方便的工作環境，而且締造了一個舉辦社區教育活動的基地，提高學生和市民的機電安全和節能意識。總部大樓已成為舉辦學生教育活動的熱門地點。正因反應熱烈，市民如欲參加我們的教育徑導覽活動，亦必須提早預約。

我們與業界交流及協辦的外展活動也取得重大進展。年內，我們到訪本港五家升降機及自動梯承辦商，以蒐集他們對我們的規管服務的意見，並與他們交流心得和經驗。我們也派遣代表團前赴廣州，到訪當地的升降機、自動梯、架空纜車、機動遊戲機及建築工地升降機監測中心，藉以交流中港兩地的安全標準。

至於氣體業界方面，我們舉辦了一連串簡報會，向氣體裝置承辦商及技工講解最新的安全規定、安全工作守則及技術指引。

每年一度的技術研討會是我們為電業界舉辦的一項極重要的活動。2005年的研討會反應熱烈，有超過900名人士出席。

As our Director rightly pointed out, 2005 was an eventful year and the staff at EMSD had to work doubly hard. Nonetheless, we are pleased to see our efforts have paid off, with recognition of our quality service and unflagging commitment to sustainable development.

As the theme of this publication suggests, we have been *"Reaching out for a Greener, Safer Community"*.

Reaching Out

Our new headquarters exemplifies our approach. Not only does it provide a modern, high-tech and user-friendly workplace for our staff, it also creates a hub of community education to raise awareness of electrical and mechanical safety and energy efficiency among students and members of the public. It has proved a very popular "education outing" for students and the guided tour along our education path has to be booked well in advance.

We have also taken strides in our trade outreach programme. During the year, we made visits to five lift and escalator contractors in Hong Kong to gather comments on our regulatory service, exchange views and share experience. We also sent a delegation to Guangzhou to call on the provincial testing centre for lifts, escalators, aerial ropeways, amusement rides and builders' lifts, enabling cross-border exchange on safety standards.

As to the gas trade, a series of briefings were held to update gas installers and contractors on the latest safety requirements, safe practices and technical guidelines.

The annual technical seminar remained one of the most anticipated events on the electrical trade's calendar. The 2005 seminar was again well attended, with more than 900 participants.

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更節能的社會

除了把新總部大樓建成為能源效益及可再生能源的典範之外，我們在這兩方面的工作可說是多不勝數。

我們就雪櫃、冷氣機及緊湊型熒光燈(即慳電膽)推行的強制性能源效益標籤計劃諮詢工作剛剛完成。預計就這3類產品推行強制性標籤計劃後，每年會為香港節省1.5億度電，即相等於約1.35億元電費。

我們已在香港東面(即風力發展潛力最大的區域)5個主要地點興建風力監測站。我們現正蒐集這些監測站全年的風力數據，以作評估。

我們的石油氣車輛計劃進展良好。在2005年，在道路上行駛的石油氣小巴數目增加大約80%。

2005年，廣泛使用新能源資源(如堆填區氣體及天然氣等)的探討工作亦向前跨出了一步。

有關方面現正興建一所氣體處理廠，處理由打鼓嶺堆填區產生的氣體。這個將堆填區氣體處理用在堆填區以外作能源用途的工程項目是目前全球最大規模的。我們負責審批該所氣體處理廠及一條19公里長的氣體管道的設計及建造，確保其完全符合安全規定。

由深圳液化天然氣接收站至香港的兩組海底輸氣管道的建造工程進展良好。我們定期進行巡查，確保其符合安全標準。

更安全的社會

我們就昂坪纜車工程項目進行的工作，須要派員前往偏遠的地點進行實地巡查。我們已檢討救援程序及視察救援演習，並會繼續監察工程的進度，確保工程完全符合安全規定。

隨着科技的進步以及市民需求的轉變，我們的規管工作亦須同步邁進。我們已更新有關升降機及自動梯的實務守則，使之與時並進。我們作出的修訂旨在方便升降機乘客在升降機內使用個人通訊設備、減少因電壓突降而引致的自動梯停止運行事故、容許自動梯自動運作以節省能源，以及方便承辦商在現時樓底較低的樓宇安裝輪椅用上落梯級的升降機。

在加強車輛維修安全方面，我們就車輛維修技工自願註冊計劃擬備了一份諮詢文件。我們在為期三個月的諮詢期內蒐集了業界的意見和建議，並進行了一項意見調查。調查結果顯示，有關註冊計劃得到業界大部分人士支持。立法會交通事務委員會亦已通過有關建議。我們現擬在2006年推行這項計劃，並會在機電工程署成立註冊辦事處，提供行政支援。

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1. 一連兩天的戶外嘉年華會是「2005年機電安全香港通」的重點項目，吸引了約13,000名市民參加。
   The 2005 E&M Safety Campaign again featured a two-day outdoor carnival which attracted about 13,000 citizens.
2. 我們負責監察昂坪纜車工程項目，確保工程完全符合安全規定。
   We monitor the Ngong Ping Skyrail project to ensure it fully complies with the safety requirements.
3. 由深圳的液化天然氣接收站連接到香港的海底輸氣管道。
   Submarine gas pipelines are constructed to connect a liquefied natural gas terminal in Shenzhen to Hong Kong.

Greener Community

While our new headquarters is a model for energy efficiency and renewable energy, our "green" efforts do not stop there.

The consultation exercise on the mandatory energy efficiency labelling scheme for refrigerators, room coolers and compact fluorescent lamps has just been completed. It is estimated that the scheme will bring about an annual energy saving of 150 GWh, which is equivalent to a reduction of $135 million in electricity charges for Hong Kong.

Wind monitoring stations have been set up in five strategic locations in eastern Hong Kong, the region with the highest wind energy potential. We are now in the process of collecting year-round data from the stations for assessment.

The LPG Vehicle Scheme progressed well, with the number of LPG-powered light buses on the road increasing by about 80 per cent in 2005.

The exploration of the wider use of new energy sources, namely, landfill gas and natural gas, also took a step forward in 2005.

In one of the world's largest off-site landfill gas utilisation projects, a plant is being built to treat gas from the landfill in Ta Kwu Ling. We are responsible for the approval of the design and construction of the gas treatment plant and a 19-km gas pipeline, ensuring full compliance with the safety requirements.

The construction of two sets of submarine gas pipelines from a liquefied natural gas terminal in Shenzhen to Hong Kong progressed well. Regular site inspections were conducted to ensure safety standards are being upheld.

Safer Community

Our work on the Ngong Ping Skyrail project required staff to reach remote locations for site inspections. We have reviewed rescue procedures and witnessed rescue drills, and will continue to monitor the project's progress to ensure it fully complies with the safety requirements.

Progressing in step with technological advances and the changing needs of the community underlies our approach to regulatory functions. The code of practice on lifts and escalators has been updated to ensure that it is in step with the times. The changes aim to facilitate the use of personal communications devices by lift passengers, reduce incidents of escalator stoppage due to a power surge, allow for automatic operation of escalators for the purpose of energy saving, and facilitate the fitting of stairs-lifts in existing buildings where headroom is limited.

As to enhancing vehicle maintenance safety, we have prepared a consultation paper on a voluntary registration scheme for vehicle mechanics. We collected feedback and suggestions over a three-month period and conducted an opinion survey which indicated that the scheme has the support of the majority of the trade. The Legislative Council Panel on Transport has also endorsed the proposal. We are now ready for the implementation of the scheme in 2006 and a registration office will be set up within EMSD to provide administrative support.

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由2007年7月1日起，固定電力裝置將會使用新的電線顏色代碼。我們的電力安全隊伍現正為推行這項計劃進行籌備工作。他們會製備一套訓練指引，並會為全部73,000名註冊電業工程人員及承辦商提供訓練。全面的宣傳活動會在2006年年初分階段進行，將更改電線顏色代碼一事公布周知。

至於氣體安全方面，我們喜見住宅式氣體用具及氣體接駁軟喉的獲批准型號數目持續上升。不過，為了加強家居氣體安全，我們推出安裝溢流控制閥的工作守則，規定採用管道式氣體供應系統的住宅式氣體煮食器具必須安裝溢流控制閥。

巡查一直是我們最重要的規管職能之一。雖然我們為應付幾個大型活動作出調配而令人手相當緊張，但我們對各個受規管界別所進行的巡查工作依然沒有鬆懈，某些界別的巡查次數甚至不減反增。不過，更重要的是我們所取得的成果。供電電纜及氣體喉管遭第三者損毀事故數目在2005年繼續減少，而自2003年起，氣體事故的數目亦持續下降。

優質服務獲得嘉許

我們特別感到欣慰的是，我們的優質服務獲得政府及市民大眾嘉許。

我們在2005年公務員優質服務獎勵計劃中贏得兩個獎項，其中一個是聯同其他政府部門贏得的「部門合作獎」冠軍；另外一個是「專門服務獎」優異獎，表揚我們在推廣電力安全方面的成績。

我們更收到葵青區議會寄來的感謝信，讚揚我們為葵芳閣停電事故所作的努力。我們的調查隊伍在現場為受影響的居民及店舖東主提供協助，並與有關的承辦商及電力公司作出協調，使該處盡快恢復電力供應。

以上嘉許實應與規管服務全體員工一同分享，他們過去多年來竭盡所能，努力工作，為本港市民提供優質服務，本人謹致衷心謝意。

何光偉

副署長／規管服務
何光偉

1. *總部大樓的教育徑設有導覽服務，以學生為主要對象。*
   Students are among our primary targets of a tailor-made guided tour of the education path at our headquarters.

2. *我們在2005年公務員優質服務獎勵計劃中贏得兩個獎項。*
   We won two awards at the Civil Service Outstanding Service Award Scheme 2005.

Our electrical safety team is now preparing for the July 2007 implementation of a new cable colour code for fixed electrical installations. It will produce a set of training guidelines and hold training sessions for all 73,000 registered electrical workers and contractors. A comprehensive publicity campaign will be rolled out in phases in early 2006 to announce the change.

As to gas safety, we are pleased to report the continuing rise of the number of approved models for domestic gas appliances and flexible gas tubing. Nonetheless, we have stepped up domestic gas safety with the introduction of a code of practice on excess flow valves, requiring these to be installed on domestic gas cooking appliances using a piped gas supply system.

Above all, we remained committed to inspection, one of our most important regulatory functions. While our people were rather stretched with a number of large events and undertakings, we managed to maintain, and even increase in some cases, the number of inspections for the various trades we regulate. But more important are the results we achieved. Third-party damage to both electricity supply lines and gas pipes continued to decline in 2005, and the number of gas incidents has shown a downward trend since 2003.

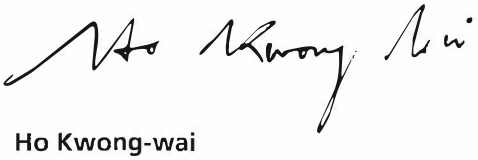
Quality Service Recognised

It is particularly heart-warming when our quality service is recognised – by the government, and more importantly, the community.

We won two awards at the Civil Service Outstanding Service Award Scheme 2005: the Champion award for a joint partnership project with other government departments, and a Merit award in specialised service for promoting electrical safety.

We also received a letter of appreciation from the Kwai Tsing District Council, which praised our efforts during the Kwai Fong Terrace power interruption incident. Our investigating team worked on-site to assist the affected residents and shop owners and coordinate with the contractor and the power company on the resumption of electricity supply.

If I may, I would like to extend this commendation to all the Regulatory Services staff members, who have, over the years, dedicated themselves wholeheartedly to their work and contributed to the delivery of quality service to the people of Hong Kong.



Ho Kwong-wai
Deputy Director / Regulatory Services

保障公眾安全
Protecting Public Safety

機械安全

香港迪士尼樂園開幕

香港的旅遊景點眾多，而香港迪士尼樂園開幕令本港再增添一個旅遊熱點。當香港市民及外地遊客在這主題公園暢遊玩樂之際，我們的隊伍正密切監察安全事宜，特別是各種機動遊戲機的操作是否安全。

迪士尼樂園機動遊戲機的設計及操作方式獨特，因此我們很久之前已展開設計審批工作，每一台機動遊戲機的設計文件，我們都詳加審閱。為使迪士尼樂園能如期開幕，在機動遊戲機的測試及校驗階段期間，我們特別派遣一隊檢查人員到樂園，視察各種輔助系統的驗收測試，並對操作人員進行評核。此外，我們也對各種運作控制措施(包括救援及疏散演習)的效用作出評估。迪士尼樂園的保養及維修人員負責機動遊戲機的日常檢查及測試工作，我們則擔當規管角色，以加強保障公眾安全。

截至2005年12月止，我們在香港迪士尼樂園進行了572次巡查及測試。

昂坪纜車工程項目進展順利

2005年，昂坪纜車工程項目進展良好，大部分的結構工程已經完成。這條長5.7公里、連接東涌及昂坪的纜車線定於2006年投入運作，屆時將成為香港另一項對本港市民及外地遊客均極具吸引力的旅遊設施。

我們負責監察纜車的設計及建造，確保工程完全符合《架空纜車(安全)條例》的規定。機電裝置的安裝工程在進行時，我們亦定期巡查工地，確保有關方面按照核准設計採取一切安全措施。由於工地位於偏遠地點，巡查人員除了須具備專門機電知識外，還須懂得爬山技巧，因此巡查工作極富挑戰性。

我們已經檢討了救援程序及視察救援演習。纜車的運行測試則在進行中。昂坪纜車會為殘疾人士(包括長者及坐輪椅人士)設置輔助設施，方便他們乘搭纜車。

作為旅遊事務署及土木工程拓展署的技術顧問，我們會繼續監察這工程項目的進度，確保工程能按計劃進行。

修訂升降機及自動梯實務守則

因應科技的發展及市民需求的轉變，我們已對《升降機工程及自動梯工程實務守則》的部分條文作出修訂。在進行修訂之前，我們已諮詢有關行業商會(包括電梯業協會及註冊電梯營造商聯會)的意見。

鑒於不少市民希望在乘搭升降機時能使用個人通訊設備，我們修訂上述守則，容許在升降機安裝不會干擾其正常運作的電纜及信號收發設備。

Mechanical Safety

Opening of Hong Kong Disneyland

The opening of Hong Kong Disneyland adds another exciting destination to Hong Kong's already extensive list of tourist attractions. While visitors from overseas and locals alike enjoy fun and laughter at the theme park, our team keeps a close eye on safety matters, particularly with regard to the various amusement rides.

As the rides at Disneyland are unique in their design and operation, we began design vetting early on, scrutinising the design documentation of every ride attraction at the theme park. To facilitate the timely opening of the park, we deployed an on-site inspection team during testing and commissioning stage, witnessing the acceptance test of various sub-systems and conducting competency tests for the operators. In addition, we also assessed the effectiveness of various operational controls including rescue and evacuation drills. Disneyland's repair and maintenance team takes charge of the daily checking and testing of the rides, while we play a vital regulatory role, providing an additional assurance of public safety.

As of December 2005, we had conducted 572 inspections and tests at Hong Kong Disneyland.

Ngong Ping Skyrail on Track

The Ngong Ping Skyrail project proceeded at pace during 2005, with most of the structural works complete. Scheduled for opening in 2006, the 5.7-km cableway linking Tung Chung and Ngong Ping represents one of Hong Kong's newest and most exciting attractions for local and overseas visitors.

We are responsible for overseeing the design and construction work, ensuring that the project fully complies with the Aerial Ropeways Ordinance. With the E&M installations well underway, our team has been conducting site inspections on a regular basis to ensure all the safety measures are incorporated as per the approved design. Site inspection is indeed challenging as it calls for E&M expertise as well as mountaineering skills, largely due to the remoteness of the sites.

We have also reviewed rescue procedures and witnessed rescue drills. A test run of the cable car is being conducted. The cable car will incorporate assistive features for disabled passengers, including the elderly and wheelchair users.

As the technical advisor to the Hong Kong Tourism Commission and Civil Engineering and Development Department, we will continue to monitor the project's progress to ensure it remains on schedule.

Code of Practice on Lifts and Escalators Amended

To progress in tandem with technological advances and the changing needs of the community, we have amended some provisions of the Code of Practice (CoP) for Lift Works and Escalator Works. This was done after consultation with the relevant trade associations, including the Lift and Escalator

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為減少因電壓突降而導致自動梯停頓的事故，我們修訂了守則內有關制動系統的條文。此外，我們亦修訂守則，容許自動梯自動運作。可自動運作的自動梯在沒有乘客使用時，便會減速或停下，這種運作方式有助節約能源。

為了讓樓底較低的現有建築物能安裝輪椅用上落梯級的升降機，我們也對實務守則作出了相應的修訂。

提升車輛維修水平

在完成諮詢工作後，我們已就實施車輛維修技工自願註冊計劃作好準備。這項計劃旨在提升車輛維修業的水平，從而促進道路安全，並讓車主有更多的選擇及令註冊技工較易為人識別。

在發出有關上述註冊計劃的諮詢文件後，我們曾進行一項意見調查，以蒐集車輛維修業對擬推行的註冊計劃各範疇的意見。我們以隨機抽樣方式從2,600個車輛維修工場中選出750個大小不一的工場，邀請它們參與我們在2004年年底進行的調查。我們訪問了649名工場經營者及1,314名維修技工。大部分受訪者均對註冊計劃表示支持，並認為應以漸進方式推行。調查結果已在2005年5月提交立法會交通事務委員會考慮，該事務委員會已通過擬議的自願註冊計劃，從而為車輛維修業引入註冊制度。

我們會成立一個諮詢委員會(由各專業學會、行業商會及培訓機構的代表組成)，並在機電工程署設立註冊辦事處，以便在2006年推行該計劃。我們將負責為該計劃提供行政支援及處理日常管理及運作事宜。

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1. *我們將推出車輛維修技工自願註冊計劃，提升車輛維修業的水平。*
   A voluntary registration scheme for vehicle mechanics will be introduced to enhance vehicle maintenance standards in Hong Kong.

2. *我們的工程師及督察到訪廣東省的監測中心，就升降機、自動梯、架空纜車、機動遊戲機及建築工地升降機的安全標準與內地人員交流意見。*
   Our engineers and inspectors visited a provincial testing centre for a cross-border exchange on the safety standards of lifts, escalators, aerial ropeways, amusement rides and builders' lifts.

Contractors Association and the Registered Elevator and Escalator Contractors Association.

Noting the desire of passengers to be able to use personal communications devices whilst riding in a lift, the CoP was amended to facilitate the installation of cabling and signal transmission devices that will not interfere with the safe operation of the lift.

To reduce incidents of escalator stoppage due to a power surge, relevant provisions were amended in relation to braking systems. Amendments were also made to allow for the automatic operation of escalators. This will help save energy as an escalator equipped with this feature will slow down or stop when it has no passengers.

Finally, the CoP was also amended to facilitate the fitting of stair-lifts in existing buildings where headroom is limited.

Vehicle Maintenance Standards Enhanced

Having consulted with the various stakeholders, we are well prepared for the implementation of a voluntary registration scheme for vehicle mechanics. The scheme aims to improve road safety by raising standards in the vehicle maintenance trade, and to provide vehicle owners with more choice and a way to easily identify registered mechanics.

Following up on the consultation paper on the registration scheme, an opinion survey was conducted to gauge the views of the vehicle maintenance trade on different aspects of the proposed scheme.

Based on random sampling, 750 vehicle maintenance workshops – a good mix of different sizes – were selected from a total of 2,600 for the survey conducted in late 2004. A total of 649 workshop operators and 1,314 mechanics were interviewed, with the majority supporting a registration scheme and preferring an incremental approach. The survey findings were reported to the Legislative Council Panel on Transport in May 2005. The panel agreed to the proposed introduction of a voluntary scheme as a way to bring about registration for the trade.

An advisory committee, comprising representatives from professional institutions, trade associations and training institutes, will be formed and a registration office will be set up within EMSD to launch the scheme in 2006. We will be tasked with providing administrative support and carrying out day-to-day management and operational functions.

Trade Communications and Exchange

We have stepped up our trade communications programme. During the year, we made visits to five lift and escalator contractors in Hong Kong to gather their comments and feedback on our regulatory service, exchange views and share experience. These visits have enhanced mutual understanding and strengthened cooperation on upholding safety standards. We are now compiling a guide to good

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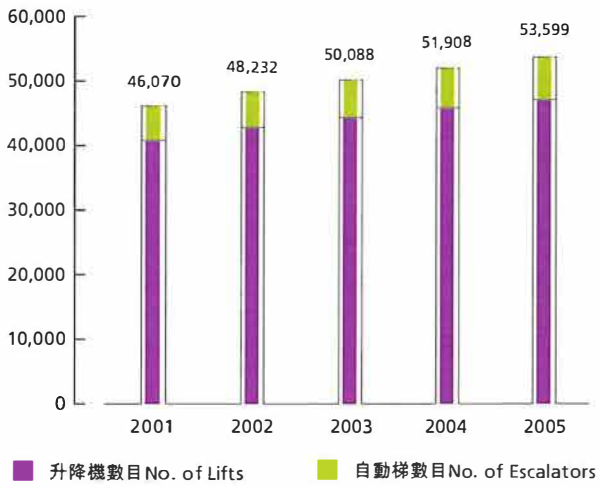
與業界溝通及交流

我們加強了與業界的溝通。年內，我們曾到訪五家香港升降機及自動梯承建商，以蒐集他們對我們規管服務的意見，並與他們交流意見及經驗。這些會面不單加深彼此的了解，也加強了雙方在維持安全標準方面的合作關係。我們現正撰寫有關提高升降機及自動梯安全水平的指引，以供業界參考。

在2005年7月，我們派遣一個由工程師及督察組成的代表團前赴廣州參觀廣東省特種設備監測中心及當地的設備製造廠。透過這次訪問，中港兩地人員就升降機、自動梯、架空纜車、機動遊戲機及建築工地升降機的安全標準交流了意見和心得。此外，我們亦應中華人民共和國國家質量監督檢驗檢疫總局的邀請，在2005年11月參加在北京舉行的一個國際論壇，並在論壇上介紹我們規管機動遊戲機的工作。

升降機及自動梯數目上升
Lifts and Escalators on the Rise



安全檢查

升降機及自動梯均為本港廣泛使用的機械裝置，因此升降機及自動梯安全成為我們規管工作的一個重要範疇。在過去數年，升降機及自動梯的數目逐步上升。截至2005年12月為止，全港有大約47,000部升降機及6,600部自動梯。至於本港的升降機及自動梯工程承建商和服務提供者的註冊方面，有49家升降機工程承建商已獲本署註冊，當中36家亦同時是註冊自動梯工程承建商。

除了升降機及自動梯外，我們也負責監察全港大約780台機動遊戲機、420台建築工地升降機及70台塔式工作平台的安裝、操作及維修。

我們在2005年進行了超過8,000次巡查，並處理超過63,000張各種機械裝置的定期測試證明書。

1. *我們在2005年為全港各類機械裝置進行了超過8,000次巡查。*
   In 2005, we conducted more than 8,000 inspections on various mechanical installations in Hong Kong.

2. *升降機及自動梯均為本港廣泛使用的機械裝置，它們的數目在過去數年逐步上升。*
   Lifts and escalators — both numbers are on the rise — are among the widely used mechanical installations in the territory.

practices in upgrading safety standards of lifts and escalators for trade reference.

A delegation of engineers and inspectors went to Guangzhou in July 2005 to call on Guangdong Province Especial Equipment Testing Centre and visit local equipment manufacturing plants. This enabled a significant cross-border exchange on the safety standards of lifts, escalators, aerial ropeways, amusement rides and builders' lifts. In addition, at the invitation of the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) of the People's Republic of China, we attended an international forum in Beijing in November 2005 to deliver a presentation about our regulatory control of amusement rides.

Safety Checks

Lifts and escalators are among the most widely used mechanical installations in the territory and a focus of our regulatory work in protecting public safety. Over the past few years, the number of both lifts and escalators has steadily increased. As of December 2005, there were about 47,000 lifts and 6,600 escalators in Hong Kong. As to the registration of contractors and service providers in Hong Kong, there were 49 lift contractors registered with EMSD, 36 of which were also registered as contractors for escalators.

Apart from lifts and escalators, we also monitor the installation, operation and maintenance of some 780 amusement rides, 420 builders' lifts and 70 tower working platforms throughout Hong Kong.

In 2005, we conducted more than 8,000 inspections, and processed more than 63,000 periodic test certificates for the various categories of mechanical installations.

加強規管服務及與業界的溝通

為加強規管服務及與業界的溝通，我們在2005年進行了一項全面的調查，以收集業界的意見及建議。

這次調查由一間研究顧問公司負責進行，旨在評估與業界溝通計劃的效用、了解業界對我們規管服務的看法，以及找出須提高效率及績效的範疇。

調查所得的結果使我們得悉現有服務及各項宣傳活動的成效。我們已經仔細研究調查報告的建議，並着手按有關建議制定改善計劃。

為整合機電工程署各規管服務範疇(即電力、機械及氣體安全)的事故匯報及分析工作，我們已建立新的事故分析框架。這個新框架使各規管服務範疇的事故數據匯報方式趨於一致，讓管理層可以更迅速及更有效分析事故數據。

更重要的是，我們可透過這個新框架就事故受害者及肇事者的資料作出統計，從而協助我們找出「易受傷害／高危組別」，並制定以他們為對象的預防措施及安全教育活動。

Enhancing Regulatory Services and Trade Communications

In a bid to enhance our regulatory services and communications programmes with the trades, a comprehensive survey was undertaken in 2005 to collect views and feedback.

A research consultancy firm was appointed to conduct the survey, which aimed to gauge the effectiveness of our trade communications programmes, to understand the attitudes of the trades towards our regulatory services, and to identify areas for effectiveness and efficiency improvements.

The survey findings have provided us with insights into the performance of our existing servicing and promotion efforts. We have also carefully reviewed the recommendations of the survey report and begun to develop improvement programmes accordingly.

In an effort to consolidate our incident reporting and analysis across the different regulatory areas under EMSD, namely, electrical, mechanical and gas safety, we have devised a new framework for incident analysis. Underlining consistency and commonality in incident data presentations across different areas, the new incident analysis framework enables management to analyse and interpret incident data more efficiently and effectively.

More importantly, the framework provides insights into the demographics of incident victims and perpetrators of the acts (or omissions) leading to the incidents. We may therefore more easily identify "vulnerable/high-risk groups". More targeted precautionary measures and safety education programmes can then be developed accordingly.

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電力安全

更改電線顏色

由2007年7月1日起，本港固定電力裝置的電線顏色代碼將會由紅／黃／藍／黑／(綠黃)改為棕／黑／灰／藍／(綠黃)。有關更改將適用於所有新電力裝置和對現有電力裝置進行的加裝及／或改裝工程。使用舊顏色電線的現有裝置則不受影響。

歐洲電工標準化委員會在2001年通過為固定電力裝置採用新電線顏色代碼，歐洲的主要國家(包括法國、德國和英國)已開始採用新電線顏色代碼。英國將會由2006年4月1日起強制推行新電線顏色系統。

本港在2003年成立了一個工作小組，成員包括商會、工會、電力公司、電線供應商、專業機構、大學和政府部門的代表，負責研究本港更改電線顏色代碼所造成的影響，特別是有關電力安全、電線供應及與國際標準一致等問題。工作小組同意有關更改會為本港的業界和市民帶來好處，因此建議本港採用新電線顏色代碼，俾能與西方國家使用的標準一致。這項建議在2004年9月獲電氣安全諮詢委員會通過。

新顏色代碼系統將於2007年7月起實施，寬限期為兩年，在寬限期內新舊電線顏色系統均可採用。

鑑於更改電線顏色或會令錯誤接駁電線的風險增加，導致故障或其他電力事故，我們進行了一項風險評估研究，並擬備有關指引，以減少可能出現的風險。英國自更改電線顏色代碼，兩年來並未收到與更改電線顏色有關的電力事故報告，因此，我們一直參考英國的經驗和指引。

本港使用的電線大部分從西方國家進口，由於這些國家均已採用新電線顏色代碼，所以使用新顏色代碼可確保本港的電線供應穩定，避免可能出現的價格波動及較長的交貨期，對業界及市民來說均有好處。

我們現正為引入新電線顏色代碼進行準備工作。我們計劃在2006至2007年間舉辦連串培訓活動，確保全部73,000名註冊電業工程人員及電業承辦商均知悉電線顏色的更改，並接受有關訓練。我們會發出安裝指引，並籌辦有關簡介會。實際上，在2005年11月為電業工程人員及電業承辦商舉辦的周年技術研討會上，我們已率先介紹更改電線顏色計劃。

我們將會修訂《電力(線路)規例工作守則》，以加入新的規定，並會舉辦多項宣傳及推廣活動，使業界和市民注意電線顏色的更改。

葵芳閣停電事故

在2005年7月發生的葵芳閣停電事故清楚帶出妥善維修大廈電力裝置的重要性。在這事件中，樓宇的掣板突然發生故障，以致電力供應中斷，購物商場和食肆無法營業，而三幢住宅大廈的住戶沒有電力供應。兩次停電時間合共超過56小時，大約600個住戶(超過3,000人)受到影響。

我們得悉葵芳閣發生停電事故後，立即派遣一支由工程師和督察組成的隊伍到現場調查。研究事故成因是我們的主要規管職能之一，而在這事件中我們的隊伍更不辭勞苦，竭盡所能協助該屋苑盡快恢復電力供應。

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1. *本港的固定電力裝置的電線顏色代碼將會更改，並由2007年7月1日起生效。*
   A new cable colour code for fixed electrical installations will come into effect from 1 July 2007.

2. *2005年的技術研討會吸引超過900名電業界人士參加。*
   The 2005 technical seminar attracted more than 900 participants from the electrical trade.

3. *《電力快訊》自2002年創刊以來，一直備受業界歡迎，讀者包括本港73,000名註冊電業承辦商及工程人員。*
   Since its launch in 2002, the Electricity News has proved to be one of the most popular and widely read newsletters for the trade, reaching 73,000 registered electrical contractors and workers in Hong Kong.

Electrical Safety

Cable Colour Change

With effect from 1 July 2007, the cable colour code for fixed electrical installations in Hong Kong will be changed from red/yellow/blue/black/(green-and-yellow) to brown/black/grey/blue/(green-and-yellow). The change will be applicable to all new electrical installations as well as additions and/or alterations to existing electrical installations. Existing electrical installations with old colour cables will not be affected.

The European Committee for Electrotechnical Standardisation adopted the new cable colour code for fixed electrical installations in 2001. Major European countries, including France, Germany and the United Kingdom, have all followed the new colour requirements. In the UK, the new cable colour code will become mandatory from 1 April 2006.

In Hong Kong, a working group comprising representatives of trade associations, workers' unions, power companies, cable suppliers, professional institutions, universities and government departments was established in 2003. This group studied the impact of the cable colour code change, paying particular attention to issues related to electrical safety, cable supply and alignment with international standards. The group agreed that the change would be beneficial to both the trade and the community of Hong Kong and recommended that the new cable colour code be adopted locally so as to align with the standards of western countries. The proposal was then endorsed by the Electrical Safety Advisory Committee in September 2004.

The new colour code system will come into effect in July 2007. There will be a two-year grace period during which both the new and old cable colour systems will be acceptable.

Noting that the change might incur a higher risk of wrong cable connection, resulting in electrical faults and incidents, a risk assessment study has been undertaken and guidelines have been prepared to treat and mitigate the identified risks. We have been making reference to the UK's experience and guidelines, as no electrical incidents attributable to the cable colour change have been reported there in the two years since the transition began.

As a substantial percentage of electric cables used in Hong Kong are imported from western countries that have adopted the new cable colour code, the use of the new code will ensure a stable supply of cables to Hong Kong. A stable cable supply helps prevent possible price fluctuations and avoids a long delivery time. Such advantages will benefit the trade and, eventually, also the general public.

We are now gearing up for the introduction of the new cable colour code. A series of training activities are planned for 2006 and 2007 to ensure that all 73,000 registered electrical workers and contractors are advised of the change and attend the relevant training. Installation guidelines will be provided and briefing sessions are being organised. In fact, the annual technical seminar for electrical workers and contractors held in November 2005 was the first step in our training plan.

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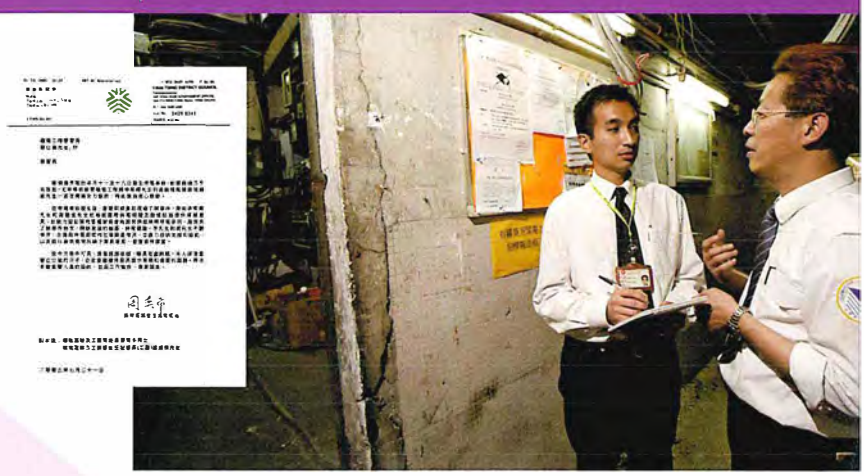

我們的隊伍在葵芳閣現場為受影響的居民和店鋪東主提供支援，透過解答他們的查詢減輕各人的憂慮。我們又出席業主的小組會議，協助講解恢復電力供應工程的進度，並就恢復供電事宜與承辦商和電力公司進行磋商。

我們的努力贏得葵芳閣居民的讚賞。葵青區議會更寄予感謝信，讚揚我們員工的專業精神和鼎力協助。

安全檢查

2005年，我們進行了超過3,700次店鋪巡查，其中651次為與產品種類或產品供應地點有關的特別巡查，較2004年增加32%。我們向供應不符合規格電器產品的店鋪發出約500封警告信，而提出的檢控有77宗。

鑑於洗衣機和電視機着火導致財物損毀的事故有所增加，我們在2005年就電器產品推行一項公眾教育計劃，包括製作新電視宣傳短片和電台宣傳聲帶及印製新海報及小冊子，推廣安全使用和妥善保養家用電器。

憑着優質服務榮獲獎項

機電工程署、屋宇署、民政事務總署、消防處、食物環境衞生署、水務署及環境保護署合辦的「樓宇維修統籌計劃」在2005年公務員優質服務獎勵計劃中贏得「部門合作獎」冠軍。

「樓宇維修統籌計劃」旨在協助業主和業主立案法團解決樓宇的管理及維修問題。我們會定期檢查大廈電力、氣體、升降機及自動梯裝置，並就安全事宜向業主提供專業意見。該計劃的最終目的，是鼓勵更多業主主動定期進行樓宇維修工程，以加強樓宇安全，藉此提升本港市民的生活質素。

我們的電力法例部在2005年公務員優質服務獎勵計劃中亦獲頒發「專門服務獎」優異獎，表揚該部在推廣電力安全方面的成就。

Quality Service Recognised in Award Scheme

EMSD, together with the Buildings Department, Home Affairs Department, Fire Services Department, Food and Environmental Hygiene Department, Water Supplies Department, and Environmental Protection Department, won the Champion Award at the Civil Service Outstanding Service Award Scheme 2005 for a joint project called "Coordinated Maintenance of Buildings Scheme".

The joint initiative aimed to assist building owners and owners' corporations in pursuing a comprehensive building management and maintenance programme. We conducted regular site inspections of electrical, gas and lift and escalator installations in buildings, and provided professional advice to owners on safety related matters. The ultimate aim of the scheme was to encourage more building owners to take the initiative to regularly maintain their buildings. In this way, building safety could be enhanced along with the quality of life of people in Hong Kong.

Our Electricity Legislation Division also won a Merit Award in Specialised Service for its outstanding work in promoting electrical safety in 2005.

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1. *我們收到葵青區議會寄來的感謝信，讚揚我們在葵芳閣停電期間所作的努力。*
   We received a letter of appreciation from the Kwai Tsing District Council, praising our efforts during the Kwai Fong Terrace power interruption.

2. *我們的電力法例部在2005年公務員優質服務獎勵計劃中獲頒發「專門服務獎」優異獎，表揚該部在推廣電力安全方面的成就。*
   Our Electricity Legislation Division won a Merit Award in Specialised Service in the Civil Service Outstanding Service Award Scheme 2005 for its outstanding work in promoting electrical safety.

The Code of Practice for the Electricity (Wiring) Regulations will be amended to reflect the new requirement. A series of publicity and promotional activities – targeting both the trade and the public have also been lined up.

Kwai Fong Terrace Power Interruption

The Kwai Fong Terrace power interruption in July 2005 is clear evidence of the importance of proper maintenance of electrical installations in buildings. In this incident, a sudden breakdown of the switchboards resulted in electricity supply interruption, affecting both the commercial operation of the shopping arcade and the restaurant, as well as the three residential blocks atop the arcade. There were two blackouts that together lasted for more than 56 hours. Some 600 households, representing more than 3,000 people, were affected.

We promptly dispatched a team of engineers and inspectors to investigate the case. While discovering the cause of these types of incidents is one of our primary regulatory functions, our team also walked the extra mile to help resume electricity supply to the estate.

We were on-site to provide immediate support to the affected residents and shop owners, alleviating their worries by answering enquiries. We attended owners' group meetings and helped explain the progress of recovery work. We also coordinated with the contractor and power company on the resumption of electricity supply.

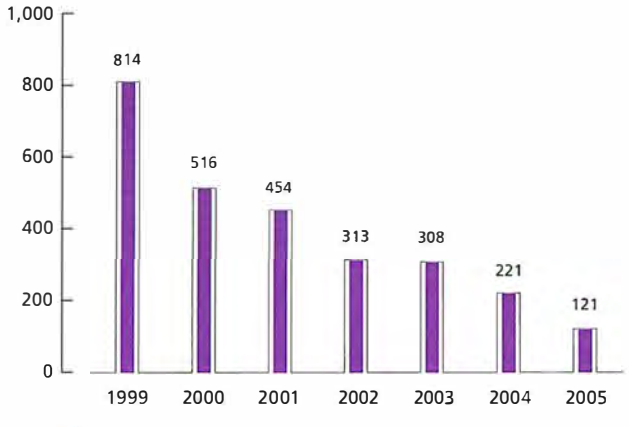
Our efforts were recognised and well received by the residents of Kwai Fong Terrace, prompting the Kwai Tsing District Council to write a letter of appreciation praising the professionalism and hard work of our staff.

Safety Checks

In 2005, we conducted more than 3,700 shop inspections, 651 of which were special operations, either product-type or supply location oriented inspections, representing a 32 per cent increase from 2004. About 500 warning letters were issued to shops supplying non-compliant electrical products, and 77 prosecutions were initiated.

In view of the increased number of incidents that involved washing machines and television sets and caused fire and property damage, a public education programme focusing on electrical products was developed in 2005. It included a new series of television and radio commercials and new posters and pamphlets to promote the safe use and proper maintenance of household electrical appliances.

電纜遭第三者損毀事故減少
Third-Party Damage in Decline



2005年，電纜遭第三者損毀事故的數目繼續減少。
The number of incidents of third-party damage to electricity supply lines continued to decline in 2005.

保障公眾安全
Protecting Public Safety

1

氣體安全

氣體喉管損毀事故減少

自1997年起，氣體喉管損毀事故的數目不斷減少。在屋邨發生的氣體喉管損毀事故宗數更由2003年的11宗減至2005年的3宗，即在兩年內減少73%！

能取得這樣的成績，主要是由於我們在多個屋邨進行社區宣傳活動。年內，我們在香港物業管理公司協會有限公司的協助下，在多個屋邨舉辦安全講座，直接向前線人員傳播安全信息。

氣體用具及喉管批准計劃

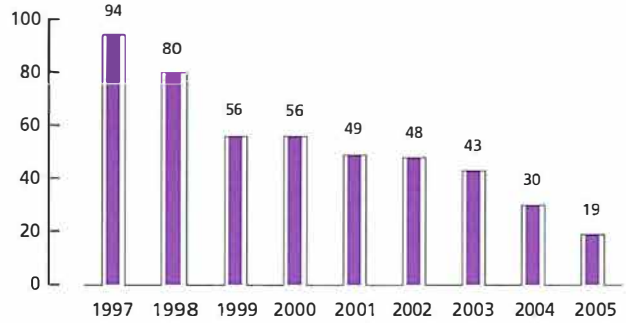
住宅式氣體用具及氣體接駁軟喉的批准計劃分別在2003年及2005年開始推行，業界反應良好。截至2005年12月止，共有925個獲批准的住宅式氣體用具型號及11個獲批准的氣體接駁軟喉型號。

喉管式氣體供應系統安裝溢流控制閥

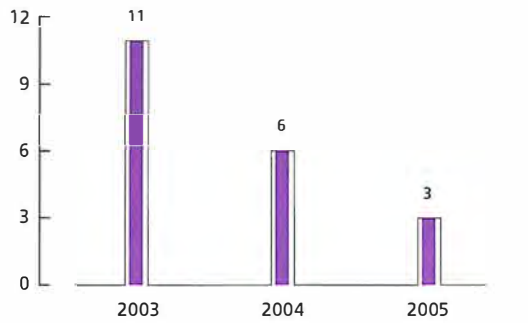
為加強住宅氣體安全，我們在2005年出版了一份實務守則，就安裝溢流控制閥為氣體業界提供詳盡的指引。該守則規定，所有註冊氣體工程承辦商及氣體供應公司都要為採用喉管式氣體供應系統的住宅式氣體煮食器具供應及安裝溢流控制閥。溢流控制閥是一種安全裝置，當氣體流量超出預定流量時，溢流控制閥便會自動切斷氣體供應。因此，安裝了溢流控制閥可防止因橡膠氣體接駁軟喉移位或遭割斷而泄漏氣體。

住宅用石油氣瓶的調壓器已有內置溢流控制裝置，故無須再安裝溢流控制閥。

氣體喉管損毀事故
Gas Pipe Damage Incidents



屋邨發生的氣體喉管損毀事故
Gas Pipe Damage Incidents at Housing Estates



1. *住宅式氣體用具的批准計劃十分成功。截至2005年12月止，獲批准的氣體用具型號達925個。*
The approval scheme for domestic gas appliances has proved a success, with 925 approved models as of December 2005.

Gas Safety

Damage Incidents in Decline

The number of incidents of damage to gas pipes has been decreasing since 1997. In particular, the number of incidents occurring at housing estates has declined from 11 in 2003 to three in 2005 – a 73 per cent drop over two years!

This gratifying feat can be attributed to our community outreach programme with housing estates. Safety talks were organised – with the help of the Hong Kong Association of Property Management Companies Limited – for a number of housing estates during the year, conveying our safety messages directly to frontline personnel.

Approval Schemes for Gas Appliances and Tubing

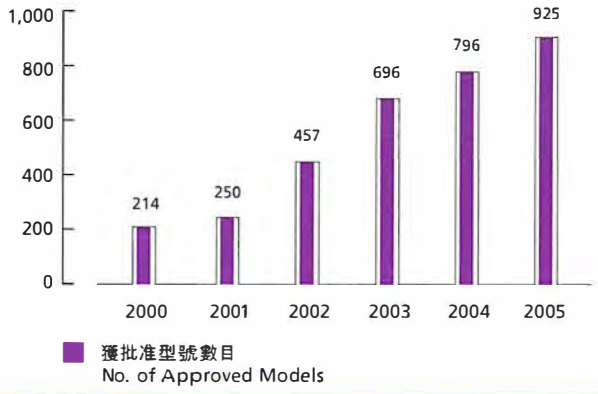
The approval schemes for domestic gas appliances and flexible gas tubing, launched in 2003 and 2005, respectively, have been well received by the trade. As of December 2005, there were 925 approved models of domestic gas appliances and 11 approved gas tubing models.

Excess Flow Valves for Piped Gas Supply

To step up domestic gas safety, a code of practice (CoP) on excess flow valves was published in 2005, providing detailed guidelines to personnel in the gas industry. The CoP requires that all registered gas contractors and gas supply companies supply and install excess flow valves on domestic gas cooking appliances using a piped gas supply system. The excess flow valve is a safety device that automatically shuts the gas supply when the flow exceeds a predetermined setting. The safety device can therefore prevent gas leakage due to dislodging or cutting of flexible rubber gas tubing.

Domestic cylinder LPG systems are not required to be fitted with an excess flow valve as the cylinder regulator has a built-in excess flow limiting device.

獲批准氣體用具
Approved Gas Appliances



保障公眾安全
Protecting Public Safety

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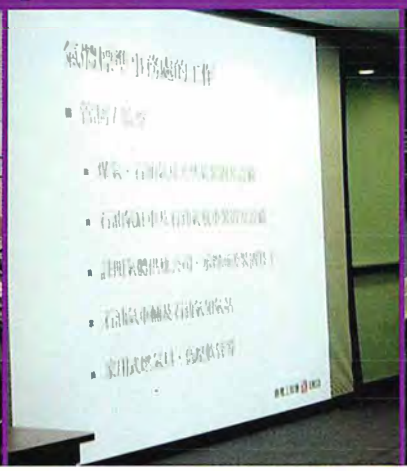
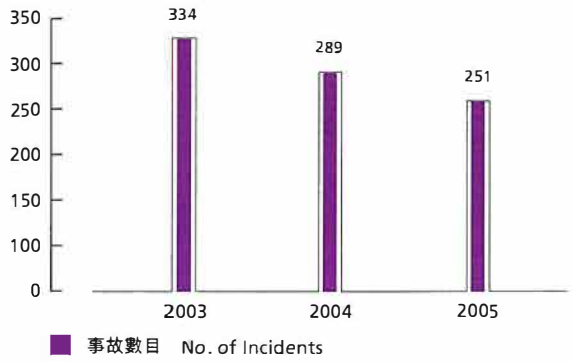


與業界溝通

我們為業界舉辦一系列簡報會，進一步加強與業界的溝通。業界對這些簡報會反應非常熱烈，各註冊氣體工程承辦商、註冊氣體裝置技工、氣體供應公司、氣體分銷商、培訓機構及行業商會均派代表出席。我們在簡報會上向業界講解最新的氣體安全規定、安全工作守則及技術指引。

此外，我們在2005年11月首次出版《氣體快訊》。這份刊物是為註冊氣體工程承辦商及註冊氣體裝置技工而設，旨在加強與業界的溝通及定期向業界講解最新的規定及守則。

氣體事故數目下降
Gas Incidents in Decline



在過去數年，家居氣體事故數目持續減少。事故數目不斷減少，主要由於我們加強了氣體用具及配件的規管工作，公眾對氣體安全的意識亦已增強，以及氣體業界改善了安全措施。
The number of gas incidents in homes has followed a downward trend in the past few years. This downward trend can be largely attributed to our strengthened regulatory control over gas appliances and fittings, as well as to enhanced public awareness of gas safety and improved trade practice in safety compliance.

世界貿易組織「第六次部長級會議」

我們為2005年12月舉行的世界貿易組織「第六次部長級會議」擬定應變措施時，是按照一項既定計劃。該項既定計劃是保安局制定的政府緊急應變系統的一部分。

機電工程署是經濟發展及勞工局的執行部門，負責規管電力及氣體供應的安全及保安事宜。因此，我們須就世貿第六次部長級會議與電力公司、氣體公司及油公司商討有關應變計劃。

我們與各公用事業公司緊密聯繫，確保這些公司就會議舉行期間可能出現的緊急情況作好準備。我們亦就供電設施加強保安措施，防止這些設施受到暴徒破壞。油公司及氣體公司的應變計劃亦須兼顧石油氣加氣站、石油氣缸車及燃料供應的保安問題。此外，我們亦制定計劃，以應付電力及氣體供應中斷情況以及在石油氣加氣站附近可能出現的緊急情況。

至於升降機及自動梯安全，我們已促請維修公司進行額外檢修，以盡量減少在會議舉行期間可能出現的故障問題。

我們在總部設立控制中心，在會議舉行期間全日24小時運作。控制中心特別配備專用電話線和無線電系統，以便為公用事業公司和控制中心提供後備的通訊設施。

至於為其他政府部門提供的支援服務，我們盡力確保所有主要的支援系統已妥為檢查，有關設施性能良好，在緊急情況下(特別是須進行搜索及救援行動時)可即時使用。我們的人員在會議舉行期間24小時候命。

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1. 我們在世貿會議舉行期間設立控制中心，全日24小時運作。
A 24-hour control centre was set up during the WTO conference.

2,3. 我們為氣體業界舉辦簡報會，講解最新的安全規定、工作守則及技術指引。
Briefings were organised for the gas trade to update them of the latest safety requirements, practices and technical guidelines.

Trade Communications Programme

We have stepped up our communications programme with a series of trade briefings. Well-attended by representatives of registered gas contractors, registered gas installers, gas supply companies, gas distributors, training institutes and trade organisations, the briefings marked the beginning of a renewed effort in trade communications. The latest gas safety requirements, safe practices and technical guidelines were covered at the briefings.

Following the briefings, a newsletter, *Gas Safety Bulletin*, was published in November 2005. Specifically designed for registered gas contractors and installers, the publication aims to enhance our communication with the trade and provide regular updates on new requirements and practices.

WTO Sixth Ministerial Conference

In preparing for the World Trade Organisation Sixth Ministerial Conference (WTO MC6) in December 2005, we drew up a contingency and emergency response plan based on our established plan, which is part of the government emergency response system under the Security Bureau.

As the executive arm of the Economic Development and Labour Bureau, EMSD has a regulatory responsibility for the safety and security of the electricity and gas supply. In this respect, we needed to coordinate with the electricity companies, gas companies and oil companies in their contingency planning for the WTO MC6 event.

In close liaison with the utilities companies, we ensured that they were in a state of preparedness for any emergency situation that might occur during the event. Preparation work was carried out to step up security measures for the power supply and to avoid any possible damage by mob action. The security of LPG filling stations, road tankers and fuel supply was well covered in the contingency plans of the oil and gas companies. Plans were also in hand for dealing with electricity and gas supply interruptions and for responding to emergency situations near LPG filling stations.

As to lift and escalator safety, we urged the maintenance companies to carry out extra checks and servicing to minimise the possibility of problems during the conference.

We set up a control centre at our headquarters, operating 24 hours a day during the conference period. Dedicated telephone lines and radio systems were also provided as fallback communications channels between the utilities companies and our control centre.

With regard to support services provided to other government departments, we made sure that all essential support systems were properly checked to ensure they were in good condition and ready for deployment during an emergency, in particular, for search and rescue operations. Our staff remained on 24-hour standby throughout the event.

推廣節約能源
Promoting Energy Conservation

新總部展示節能科技

我們的新總部是可持續發展的最佳例證。我們把前空運貨站大樓改建成總部大樓，並保留了原有大樓大部分鋼筋混凝土結構。改建工程為我們節省高達7億元的工程費用，並減省拆卸重建所須耗用的能源。

新總部大樓共有7層，總樓面面積為81,000平方米，設有辦公室、汽車工場及電子工場，容納約2,100名員工。

新總部大樓設有多種節能設施，並應用了可再生能源科技。這些設施為大樓節省10%或以上的能源。

大樓的天台安裝了全港最大的太陽能光伏板系統。該系統由2,300多塊太陽能光伏板組成，最高產電量可達350千瓦。光伏板已和電力公司聯網，每年可利用陽光產生約300,000至400,000度電(約相等於本港90個家庭一年的總用電量)，即總部大樓3%至4%的用電量。同時，該系統亦可令發電廠每年減少排放210至280公噸二氧化碳。

大樓的水冷式製冷機以更具能源效益的氨作為製冷媒體。此外，我們也利用熱輪系統預先冷卻從室外抽取的新鮮空氣。

其他環保設施包括：

- 通風的雙層幕牆 — 雙層玻璃的中央回風氣槽利用循環回收的冷空氣減低玻璃的溫度，從而減少空調系統的耗電量。
- 反射日光導管 — 把天然光引入至辦公室部分地方，以減少照明裝置的數量。
- 移動及日光感應器 — 控制照明系統，避免不必要耗用電力。走廊通道天花板的電燈會隨着人的步伐而自動亮着，而辦公室的天花燈只會在有人進入時才亮着，沒有人時會自動關掉；若有足夠日光，燈光更會自動調暗。
- 擋陽板 — 減少陽光直射進大樓，從而減低空調耗電量。
- 廢水回收循環再用系統 — 作沖廁之用。
- 節能檯燈

新總部大樓揉合了可持續發展概念、出色建築設計和美感，故贏得香港建築師學會2004年年獎優異獎。

New Headquarters as Showcase

Converted from a former cargo terminal building, our new headquarters exemplifies sustainable development at its best. Savings of up to $700 million were realised by retaining most of the concrete and steel structure of the old building, not to mention the energy that would have been used in demolishing an existing structure and constructing a new building.

A seven-storey building with a gross floor area of 81,000 square metres, our new headquarters comprises offices, vehicle workshops and electronics workshops, and houses some 2,100 staff members.

The new headquarters building has a number of features that enhance energy efficiency and embrace the use of renewable energy. Together, these features make the headquarters building more energy efficient by 10 per cent or more.

The solar photovoltaic system installed on the roof is the largest of its kind in Hong Kong, consisting of more than 2,300 photovoltaic panels with a maximum generation capacity of 350 kW. The panels are grid-connected with the distribution network of the power company, producing about 300,000 to 400,000 kWh of electricity annually from direct sunlight. The amount is roughly equivalent to the total annual electricity consumption of 90 families in Hong Kong and represents three to four per cent of the electricity consumption of the headquarters building. At the same time, the system reduces carbon dioxide emissions from power stations by 210 to 280 tonnes a year.

In addition, ammonia, a more efficient refrigerant, is used in the water-cooled air-conditioning chiller plant for the building. Furthermore, heat wheel systems are used to pre-cool fresh air intake from outside.

Other environmentally friendly designs include:

- A ventilated double-skin façade that has a return path for cool air in the void between the two layers of glass. This lowers the temperature of the glazing, thus reducing the amount of energy consumed by the air-conditioning system
- Reflective sunpipes, which direct daylight to illuminate part of the offices, minimising the need for artificial lighting
- Motion and daylight sensors that control lighting to minimise unnecessary usage. Overhead lights automatically switch on as people move through the hallways. Similarly, office ceiling lights switch on when one enters, switch off when one leaves, and dim down when there is ample sunlight
- Sunshades that minimise direct sunlight penetrating the building, thus reducing the energy required for air conditioning
- A grey water recycling system for flushing purposes
- Energy-saving desk lamps

Combining sustainable development, good architecture and aesthetics, our new headquarters building won a Merit Award in the Hong Kong Institute of Architects' 2004 Annual Awards.

推廣節約能源
Promoting Energy Conservation

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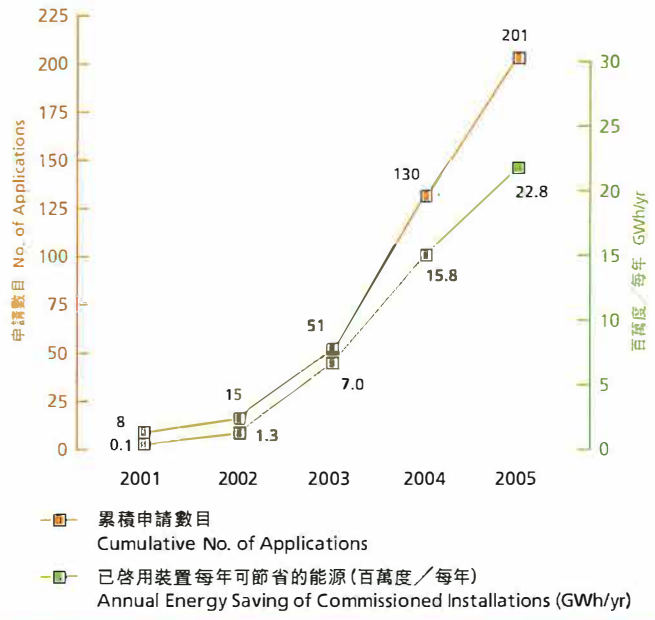
強制性能源效益標籤計劃

能源效益標籤計劃(標籤計劃)自1995年推出以來，備受各界人士歡迎，透過這項計劃，可協助消費者養成節約能源的習慣。標籤計劃為消費者提供產品的能源表現資料，使他們在購買產品時能作出明智的選擇，並提供誘因鼓勵產品供應商推出具能源效益的產品。現時，標籤計劃涵蓋17類產品，包括家用器具、辦公室設備及汽車。

在2005年，我們認為是適當的時候就推行強制性標籤計劃展開準備工作。這項計劃是政府持續推廣善用和節省能源的一項措施。我們已在2005年進行為期3個月的諮詢，以蒐集市民、業界及其他相關人士的意見。

冷卻塔計劃
Cooling Tower Scheme



在推廣善用和節約能源及達致可持續發展方面，強制性標籤計劃可發揮重要作用，這方面在國際上已得到充分確認。超過40個國家(包括美國、歐盟、澳洲、新西蘭、加拿大和南韓)已就多種產品成功推行強制性標籤計劃。

我們建議在首階段把雪櫃、冷氣機及緊湊型熒光燈(即慳電膽)納入強制性標籤計劃。這3類產品的用電量合共佔住宅用電量的70%以上，在推行自願參與的標籤計劃初期已納入該計劃內，而且市場滲透率最高。

根據建議的強制性標籤計劃，這3類產品的進口商和本地製造商須先向機電工程署登記產品型號，才可把產品推出本港市場發售。我們會為強制性標籤計劃制定新的能源標籤，標籤會清楚顯示有關器具的能源效益等級。

我們估計就上述3類產品推行強制性標籤計劃後，每年可節省1.5億度電，相等於約1.35億元電費，而且每年可減少排放105,000公噸二氧化碳。

冷卻塔計劃

推行冷卻塔先行性計劃是我們在香港推廣水冷式空調系統的主要措施。該計劃繼續得到發展商、業主及物業管理公司鼎力支持。2005年，我們收到71宗採用較節能的蒸發式冷卻塔空調系統的申請，較2004年的累積申請數目增加55%。

我們在2005年10月舉辦了一個經驗分享座談會，吸引了大約180名人士參加，當中包括大廈業主、物業管理人員、工程顧問及裝置和服務承辦商。主講人在會上與參加者分享他們在冷卻塔的設計、安裝、操作和保養及水質管理和節約能源方面的經驗。

1. *私營機構對較節能的蒸發式冷卻塔空調系統的支持與日俱增。*
   The private sector has expressed increasing support for the more energy-efficient evaporative cooling tower-type air-conditioning system.

2. *特區政府準備就雪櫃、冷氣機及緊湊型熒光燈(即慳電膽)推行強制性標籤計劃。*
   The SAR government is prepared to introduce a mandatory Energy Efficiency Labelling Scheme for refrigerators, room coolers and compact fluorescent lamps.

Mandatory Energy Efficiency Labelling Scheme

Since 1995, the Energy Efficiency Labelling Scheme (EELS) has proved a popular and successful initiative to promote energy saving practices among consumers. By informing consumers of the energy performance of particular products, the scheme helps them make wise purchase choices. It also provides an incentive for product suppliers to market more energy-efficient products. The scheme now covers 17 product categories, including household and office appliances and vehicles.

In 2005, it was considered an opportune time to prepare for the introduction of a mandatory EELS as part of the government's ongoing efforts to promote the efficient use and conservation of energy. Views of citizens, businesses, and other stakeholders were collected over a three-month consultation period in 2005.

The useful role of a mandatory labelling scheme in promoting energy efficiency and conservation and achieving sustainable development is well established internationally. Over 40 countries, including the United States, European Union, Australia, New Zealand, Canada and South Korea, have introduced mandatory EELS for various products, with successful results.

Refrigerators, room coolers and compact fluorescent lamps (CFL) were proposed to be included in the initial phase of the mandatory EELS. These three products together account for over 70 per cent of electricity consumption in the residential sector. They have been included in the voluntary EELS from its early stages and have the highest market penetration rates under the scheme.

Under the proposed mandatory scheme, importers and local manufacturers of these three products will have to register their products with EMSD prior to supplying them to the local market. A distinctive new energy label that clearly indicates the energy efficiency grade of the appliance will be developed for the mandatory scheme.

With the implementation of the proposed mandatory EELS for these three products, it is estimated that energy savings of 150 GWh per year could be achieved, which is equivalent to a monetary saving of $135 million in electricity bills per year. It also brings an annual reduction of carbon dioxide emissions of 105,000 tonnes.

Cooling Tower Scheme

The Cooling Tower Pilot Scheme, a key initiative in promoting water-cooled air-conditioning systems in Hong Kong, continued to draw enthusiastic support from developers, owners and management companies. In 2005, we received 71 applications for the adoption of the more energy-efficient evaporative cooling tower-type air-conditioning system, a 55 per cent increase over the cumulative applications in 2004.

An experience-sharing seminar was organised in October 2005, attracting some 180 attendees, among them building owners, property management personnel, engineering consultants, and installation and service contractors. Presenters shared their experiences of the design, installation, operation and maintenance of cooling towers, as well as of water quality management and energy saving.

Exploring Wind Power

Our field-based wind measurement programme was in full swing in 2005 – with all five wind monitoring stations operational at Government Logistics Centre, Town Island, Pottinger Peak, Tung Lung Chau and Miu Tsai Tun, respectively. These installations are located primarily on the eastern side of Hong Kong, the region which is considered to have a relatively

推廣節約能源
Promoting Energy Conservation

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研究在本港使用風能

2005年，我們全力推行風力測量計劃。5個分別位於政府物料營運中心、伙頭墳洲、硃甸乍山、東龍洲及廟仔墩的風力監測站已全部投入運作。這些監測站主要位於香港的東面，亦即是風力資源較多的區域。我們現正蒐集這些監測站全年的風力數據，以便就香港東面地區的風力發電潛力進行評估。

香港電燈有限公司在南丫島建造了一座具生產規模的風力發電機，以支持我們提倡在本港廣泛使用風能的措施。該風力發電機高71米，功率高達800千瓦，一年可產生100萬度電，足以滿足250個家庭的電力需求。該發電機可節省350公噸用以發電的煤，並減少850公噸二氧化碳排放量和其他排放物。發電機與電網接駁後，有助向市民大眾示範在本港使用風力發電的潛力。座落該發電機毗鄰的教育中心預計於2006年年初開放給市民參觀。

此外，中華電力有限公司亦在進行一個具生產規模的風力發電機工程項目，現正進行詳細可行性研究。

可持續發展策略

作為可持續發展委員會策略工作小組轄下可再生能源支援小組的成員，我們參與制訂《香港首個可持續發展策略》。該策略已於2005年發表。

此外，我們亦協助將策略文件所載的一些主要措施付諸實行。這些措施包括：與電力公司一起作出安排，簡化可再生能源用戶接駁現有供電網絡的程序；並制訂在新的政府建築物及主要公共工程項目安裝可再生能源設施的政策。

與電網接駁的可再生能源系統

香港有不少小型可再生能源裝置，大部分為發電量由數千瓦至數十千瓦不等的光伏裝置。這些裝置大部分為供電給特別負荷的獨立系統，小部分則直接連接有關場地或建築物內的配電系統。後者稱為「與電網接駁的可再生能源裝置」，因為這些裝置會與電網並行運作，以應付有關場地或建築物的用電需求。

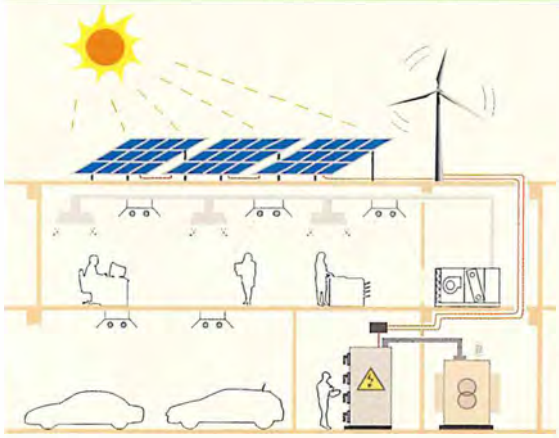
由於可再生能源資源並非恒常或從不間斷，獨立運作的可再生能源裝置的輸出功率會因應天氣情況等因素而有所變動。不過，如因天氣關係而令太陽能或風能減少，與電網接駁的可再生能源裝置的電力供應便會由電網補充。將小型可再生能源發電系統與電網接駁的做法，在很多國家都常見。

由於與電網接駁的可再生能源裝置有很多好處，我們成立了一個工作小組，目的是制訂小型可再生能源發電系統與電網接駁的技術指引。該套技術指引於2005年出版，旨在概述有關透過配電系統將小型可再生能源發電系統與電網接駁的各項技術問題。我們已特別顧及在安全、設備保護、電力供應可靠性及電力質素方面的法定規定。

小型可再生能源發電系統一旦與電網接駁，即成為配電系統的一部分。確保小型可再生能源發電系統在安全及可靠的情況下運作，對系統的擁有人、電力公司以至政府均有利。

政府工程項目採用節能及可再生能源技術

香港特別行政區政府再次率先將可持續發展付諸行動。我們發出技術通告，提倡在政府工程項目及裝置採用節能設施及可再生能源技術。該通告的內容涵蓋所有由工務部門進行的基本工程項目及小型工程項目，包括改裝及翻新工程項目。根據這項



1. 如果可再生能源裝置與電網接駁，它的電力供應可由電網補充，避免因天氣關係而令太陽能或風能減少而造成不穩定的電力供應。
When a renewable energy installation is connected to the electricity grid, its power output can be supplemented by the grid supply, avoiding the fluctuations — in solar or wind energy — due to weather conditions.

high wind energy resource. We are now in the process of collecting year-round data from the monitoring stations to facilitate assessment of the wind energy potential in the eastern part of the territory.

Hongkong Electric has set up a production-scale wind turbine on Lamma Island to support our drive to promote the wider application of wind energy in Hong Kong. Measuring 71 metres in total height, the 800 kW wind turbine is capable of generating one million kWh of electricity a year, sufficient for the power needs of 250 families. It will save 350 tonnes of coal for power generation, and bring about a reduction of 850 tonnes of carbon dioxide and other emissions. Connected to the electricity grid, the wind turbine helps to demonstrate the potential of utilising wind energy for power generation in the territory. An education centre located next to the wind turbine is scheduled to open to the public in early 2006.

CLP Power is also working on a production-scale wind turbine project, and is now undertaking detailed feasibility studies.

Sustainable Development Strategy

As a member of the Support Group on Renewable Energy under the Strategy Sub-committee of the Council for Sustainable Development, we contributed to the formulation of the First Sustainable Development Strategy for Hong Kong, which was published in 2005.

Moreover, we have helped put into action some of the key initiatives outlined in the Strategy document. These included: working with the power companies on arrangements for simplifying procedures for renewable energy users to gain access to the existing electricity grid; and formulating a policy for the installation of renewable energy facilities as part of new government buildings and major public sector projects.

Grid-Connecting Renewable Energy Systems

In Hong Kong, there are quite a number of small-scale renewable energy (RE) installations, with the majority being photovoltaic (PV) installations with capacities ranging from a few kW to tens of kW. Most of these installations are standalone systems serving dedicated loads, with the exception of a few directly connected to the electricity distribution system within the site or building. The latter systems are called "grid-connected" RE installations as they operate in parallel with the electricity grid to serve the electricity needs of the respective sites or buildings.

The power output from a standalone RE installation fluctuates due to the intermittent nature of RE sources – because of weather conditions, for example. However, the power output of a grid-connected RE installation can be supplemented by the grid supply when the solar or wind energy is curtailed by weather. Connecting small-scale RE power systems (SREPS) to the electricity grid is very common in some countries.

Given the advantages of a grid-connected RE installation, a working group was formed to develop technical guidelines on grid connection specifically for SREPS. A set of technical guidelines were published in 2005, outlining the various technical issues relating to the connection of SREPS to the electricity grid through the distribution system. Particular consideration was given to statutory requirements on safety, equipment protection, reliability of electricity supply and power quality.

Once a SREPS is grid-connected, it becomes part of the electricity distribution system and it is in the common interest of the owner, the utility and the government to ensure that the SREPS operates in a safe and reliable manner.

推廣節約能源
Promoting Energy Conservation

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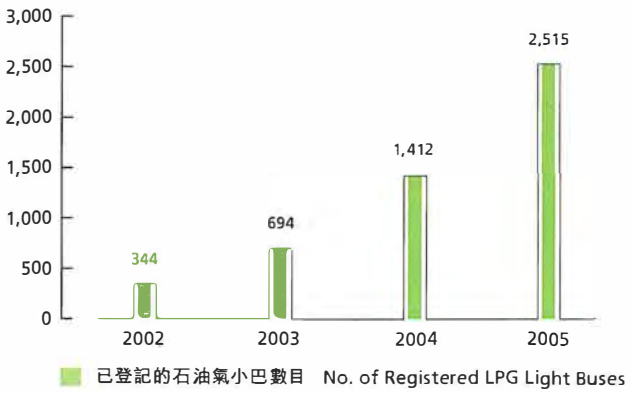
政策，機電工程署會擔任顧問，就特定工程採用節能設施及可再生能源技術的潛力及適用性作出檢討。我們亦須確保工程項目遵從建築物能源效益守則，並就採用冷卻塔空調系統及太陽能熱水供應系統提供意見。

我們也負責監察公共工程項目採用節能設施及可再生能源技術的進度，並管理一個數據庫，供各政府部門分享經驗及參考之用。

石油氣車輛計劃

全港18,000輛的士已差不多全部採用石油氣，而石油氣小巴數目亦已上升。截至2005年12月止，本港有超過2,500輛石油氣小巴，數目較2004年增加差不多80%，投入服務的石油氣加氣站則超過50個，並有近1,000名曾受訓的註冊技工。

石油氣車輛計劃
LPG Vehicle Scheme



堆填區氣體

廢物分解所產生的氣體可作發電之用。堆填區所產生的氣體通常用作生熱燃料或用作發電，供堆填區內的設施使用。位於打鼓嶺的新界東北堆填區是全球最大的堆填區之一，所產生的氣體量十分龐大，即使輸送至堆填區以外作能源用途，也符合經濟效益。有關方面現正興建一所堆填區氣體處理廠，以處理從新界東北堆填區抽取的氣體，然後將經處理的氣體輸送至一間位於大埔的煤氣廠。

這個將堆填區氣體用在堆填區以外作能源用途的工程項目是全球最大規模的。有關工程項目將堆填區氣體用作生產煤氣的生熱燃料，不但有助保育天然資源，亦可減少溫室氣體的排放量。

我們負責審批該所氣體處理廠及一條長達19公里的氣體管道的設計及建造，確保由廠房操作以至輸送經處理的氣體的每個階段，均符合安全標準。

天然氣

由深圳的液化天然氣接收站連接至南丫島的發電廠及大埔的煤氣廠的海底輸氣管道的建造工程，在2005年進展良好。

我們已審批管道的設計，並會負責監察有關的建造工程。我們在施工階段不時進行巡查，確保工程項目完全符合安全規定。該兩組分別長92公里及32公里的海底輸氣管道已在海牀下鋪設及埋藏，預期在2006年投入服務。

與此同時，一家電力公司計劃在香港建造液化天然氣接收站，以儲存液化天然氣和供應再氣化的天然氣予一所發電廠。現時有兩個選址方案，當局正就每個方案進行環境影響評估。作為技術顧問，我們會在選址過程中向環境保護署提供協助。

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1. *本港超過2,500輛小巴採用石油氣。*
   There are more than 2,500 LPG-powered light buses on the road.

2. *在海牀下鋪設兩組輸送液化天然氣的海底管道。*
   Two sets of submarine pipelines for liquefied natural gas are laid below the seabed.

Government Projects to Adopt Energy Efficiency and Renewable Energy Technologies

The SAR government is again taking the lead in putting sustainable development into action – with the issuance of a technical circular that advocates the adoption of energy efficiency features and renewable energy technologies in government projects and installations. The circular covers all capital works projects and minor works projects by works departments, including retrofit and renovation projects. Under this policy, EMSD will act as an advisor reviewing the potential and applicability of energy efficiency features and renewable energy technologies for specific projects. Our role will be to ensure compliance with the energy efficiency codes for buildings, and advise on the adoption of cooling towers for air-conditioning systems and of solar water-heating systems.

We are also responsible for monitoring progress in the adoption of energy efficiency features and renewable energy technologies in public works projects and for maintaining a database for experience sharing and referencing by all government departments.

LPG Vehicle Scheme

While almost all 18,000 taxis in Hong Kong are running on LPG, the number of LPG-powered light buses is also on the rise. As of December 2005, there were more than 2,500 LPG light buses, representing an increase of almost 80 per cent from 2004. There were more than 50 LPG filling stations in service and almost 1,000 trained mechanics registered with EMSD.

Landfill Gas

Decomposition of waste generates gas, which can be utilised for power generation. For landfills, the gas generated is usually used as a heating fuel or for power generation for on-site facilities. In the case of the North East New Territories (NENT) Landfill in Ta Kwu Ling, which is among the largest in the world, the gas so generated reaches the level at which off-site utilisation is economically viable. A landfill gas treatment plant is being built to treat extracted landfill gas from the NENT Landfill and then convey the treated gas to a towngas production plant in Tai Po.

The off-site landfill gas utilisation project, one of the largest in the world, will help conserve natural resources as the landfill gas is used as an alternative heating fuel for the production of towngas. It will also reduce emissions of greenhouse gases.

EMSD is responsible for the approval of the design and construction of the gas treatment plant and the 19-km gas pipeline, ensuring safety standards are upheld at every stage – from the operation of the plant to the delivery of the treated gas.

Natural Gas

The construction of submarine gas pipelines from a liquefied natural gas (LNG) terminal in Shenzhen to a power station on Lamma Island and a towngas production plant in Tai Po progressed well in 2005.

Having approved the pipeline designs, we are responsible for overseeing construction work. Inspections have been conducted throughout the construction stage to ensure the projects are in full compliance with the safety requirements. The two sets of submarine gas pipelines, 92 km and 32 km long, respectively, have been laid and buried below the seabed. They are scheduled to go into service in 2006.

Meanwhile, a power company is planning to build a LNG receiving terminal in Hong Kong for the storage of LNG and the supply of regasified natural gas to a power station. Two site options were identified and each is now undergoing environmental impact assessment. As a technical advisor, we will assist the Environmental Protection Department during the site search process.

提高公眾安全及節能意識
Raising Public Awareness

教育徑

新總部大樓設有最新的節能設施，並應用可再生能源技術。這些設計使大樓成為舉辦教育活動的理想地點，藉以向學生及市民傳達節能及可持續發展的信息。

我們在總部大樓闢設教育徑，展示在香港節約能源的最佳例子，並介紹我們的規管工作。我們就教育徑舉辦導覽活動，提高訪客對能源效益、可再生能源，以及電氣、氣體和機械安全的知識。

展覽館是教育徑的首站。我們藉着展覽館內的互動式展品及活動，提高訪客對能源效益及可再生能源的意識。這些展品是我們借鏡本地和外國經驗以及利用實況個案研究結果製成的。沿徑而行，訪客會到達機電安全展覽區和一個設有200個座位的演講廳。位於大樓天台的觀景台是教育徑的終站。訪客可從觀景台觀賞到全港最大的太陽能光伏板系統。該系統每年可直接利用陽光產生大約300,000至400,000度電，並每年可減少超過200公噸的二氧化碳排放量。

機電安全香港通

我們已連續5年與來自不同界別的主要機構合辦「機電安全香港通」運動，這是本港公營部門和私營機構合辦的最大型公眾教育活動之一。

一如往年，2005年的運動透過各類社區及宣傳活動，加深市民對機電安全及能源效益的認識。

戶外嘉年華會仍然是這項運動的重點項目，我們在會場內設置具教育意義的遊戲攤位，並向市民派發宣傳單張。2005年的嘉年華會在10月舉行，日數再度延長至兩天，吸引了約13,000名市民參加。

我們就能源效益、電氣安全、氣體安全及升降機和自動梯安全分別製作了4套新的宣傳短片。為了把有關信息帶到全港每一個角落，我們安排在各類公共交通工具(包括巴士和地鐵)播放這些宣傳短片。

其他社區及宣傳活動包括能源效益康樂棋盤設計比賽、家居電氣安全問答遊戲、氣體安全問答比賽，以及有關升降機及自動梯安全的電腦遊戲軟件創作比賽。我們並透過電台及報章進行宣傳工作。

Education Path

Equipped with the latest energy efficiency features and renewable energy applications, our new headquarters is an ideal venue for programmes that educate students and the community about energy conservation and sustainable development.

An education path has been set up within our headquarters building to showcase best practices in energy conservation in Hong Kong and to highlight our regulatory functions. A tailor-made guided tour on the education path helps to enhance visitors' understanding of energy efficiency, renewable energy, and electrical, gas and mechanical safety.

Visitors begin their journey at an exhibition gallery designed to promote awareness of energy efficiency and renewable energy through the use of interactive gadgets and activities. The exhibits reference both local and overseas experience and use real-life case studies. The education path continues with an E&M safety exhibition area and a 200-seat lecture theatre. It then ends at a viewing gallery located on the rooftop of the building, where Hong Kong's largest solar photovoltaic system can be admired. The system produces about 300,000 to 400,000 kWh of electricity annually from direct sunlight and achieves a reduction in carbon dioxide emissions exceeding 200 tonnes a year.

E&M Safety Campaign

For five consecutive years, we have teamed up with key industry players from various sectors to organise the E&M Safety Campaign, one of Hong Kong's largest collaborations between the public and private sectors in public education.

As usual, the 2005 campaign featured a wide range of community and media programmes designed to further the community's awareness of electrical and mechanical safety as well as the importance of energy efficiency.

The outdoor carnival remained the highlight of the campaign, featuring educational game booths and informative leaflets. The carnival was again expanded into a two-day event and attracted about 13,000 people over a weekend in October 2005.

A new set of four video commercials were created, covering energy efficiency, electrical safety, gas safety, and lift and escalator safety, respectively. The commercials were shown on different modes of public transport, including buses and the MTR, conveying our messages to every corner of the territory.

Other community and publicity programmes included a snakes and ladders game board design competition on energy efficiency, a quiz on household electrical safety, a gas safety quiz, and a computer game design competition on lift and escalator safety. We also ran a series of advertisements on radio and in newspapers.

Sixteen leading organisations and trade associations – coming from the utilities, public transport, housing, and E&M fields – joined EMSD in the 2005 campaign. They were: China Inspection Company Limited, China Resources Petrochems (Group) Company Limited, CLP Power Hong Kong Limited, ExxonMobil Hong Kong Limited, Hong Kong and China Gas Company Limited, Hongkong Electric Company, Limited, Hong Kong Housing Authority, Hong Kong International Airport, Hong Kong and Kowloon Electrical Appliances Merchants Association, Hong Kong L.P. Gas (Holdings) Limited, Hong Kong Safety Institute, Hong Kong Tramways Limited, Kowloon and Canton Railway Corporation, the Lift and Escalator Contractors Association, MTR Corporation, and Shell Hong Kong Limited.

提高公眾安全及節能意識
Raising Public Awareness

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與機電工程署合辦「機電安全香港通2005」的16個主要機構和行業商會來自公用事業、公共交通、屋宇物業和機電界，包括中國檢驗有限公司、華潤石化(集團)有限公司、中華電力有限公司、埃克森美孚香港有限公司、香港中華煤氣有限公司、香港電燈有限公司、香港房屋委員會、香港國際機場、港九電器商聯會、香港液體氣(集團)有限公司、香港安全認証中心、香港電車有限公司、九廣鐵路公司、電梯業協會、地鐵有限公司和香港蜆殼有限公司。

令人舒適的空調溫度

「世界環境日2005」展開了一項宣傳運動，鼓勵本港市民在夏天把空調室溫維持在攝氏25.5度。根據美國供暖製冷及空調工程師學會(ASHRAE)調查所得，若空調室溫為攝氏22.5至25.5度，大多數人都會感到舒適。如把空調溫度由攝氏22.5度調高至攝氏25.5度，可令空調設備節省約9%能源。

空調系統的用電量佔全港總用電量約三分之一。在夏天，室內空調溫度過低的情況相當普遍，不少市民在室內需要穿著額外的衣服。機電工程署鼓勵市民把空調室溫調節至攝氏25.5度，並為市民大眾提供節能貼士。

我們也製作了宣傳單張及電視宣傳短片，以便向市民傳達節能信息。

慳電膽燈飾設計比賽

「慳電膽燈飾設計比賽」由機電工程署、香港照明學會和香港理工大學合辦，共收到超過50份由多間大專院校的全日制和兼讀制學生遞交的作品。所有作品的設計水平均十分高，而且甚具創意和實用性。頒獎典禮已在2005年3月舉行。

這項比賽旨在推廣在家居應用節能科技，並提高學生的節能意識。參賽者所設計的物品為慳電膽，與普通燈膽比較，慳電膽可節省高達80%的能源。

青少年教育活動

我們為小學生舉辦網上問答比賽，藉此推廣網上自學。這項比賽旨在提高學生安全使用機電裝置的意識，並加深他們對能源效益和節約能源的認識。比賽以互動方式進行，吸引了約400間學校的60,000名學生參加。

我們又推出一個為家庭和兒童而設的新互動網站，推廣安全使用機動遊戲機。瀏覽者在進入「安全樂園」網站後，可在一個虛擬的主題公園內享受乘坐機動遊戲機的樂趣。該網站讓青少年在遊戲中學習，並為家長提供詳盡資料，使他們可以教導子女如何安全使用機動遊戲機。

1. *我們協助推廣把空調室溫調節至攝氏25.5度的信息，並為市民大眾提供節能貼士。*
   We help promote the 25.5°C setting for air-conditioned room temperature and offer energy saving tips to the general public.

2. *我們舉辦的網上機電安全問答比賽，吸引了約400間學校的60,000名學生參加。*
   A Web-based E&M safety quiz has attracted 60,000 students from some 400 schools.

3. *我們推出「安全樂園」互動網站，利用一個虛擬的主題公園推廣安全使用機動遊戲機。*
   A new, interactive website designed to promote amusement ride safety, "Safepark" features a virtual theme park environment.

Air-Conditioned Comfort Level

World Environment Day 2005 marked the kick-off of a promotional campaign aimed at encouraging people in Hong Kong to maintain the air-conditioned room temperature in summer at 25.5°C. According to a survey conducted by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, most people feel comfortable with temperatures between 22.5°C to 25.5°C. If the room temperature is raised from 22.5°C to 25.5°C, it will result in an energy saving of about nine per cent for air-conditioning equipment.

About one-third of the electricity consumed in Hong Kong is used for air conditioning. Noting that the room temperature is often set too low in summer, with people wearing extra clothing in air-conditioned premises, EMSD helped promote the 25.5°C setting for air-conditioned room temperature, and offered energy saving tips to the general public.

Promotional leaflets and television commercials were developed to convey the message to the community.

CFL Lighting Fittings Design Competition

The Design Competition of Lighting Fittings for Compact Fluorescent Lamp (CFL), a joint effort between EMSD, CIE (Hong Kong) and the Hong Kong Polytechnic University, was an unmitigated success. More than 50 entries were received from full-time and part-time tertiary students. All were of an exceptionally high standard, exemplifying both originality and practicality. The award presentation took place in March 2005.

The competition aimed to promote energy saving technology in wider domestic applications, and to arouse students' awareness of energy saving. CFL, which delivers energy savings of up to 80 per cent compared to the ordinary light bulb, was selected as the subject for the design competition.

Education for the Young

An online quiz for primary school students successfully encouraged self-learning on the Web. Aiming to strengthen students' understanding of the safe use of electrical and mechanical installations, and their awareness of energy efficiency and conservation, the interactive safety quiz attracted the participation of 60,000 students from some 400 schools.

A new, interactive website designed for families and children was launched to promote amusement ride safety. Visitors to the "Safepark" website enjoy the fun of games and rides in a virtual theme park environment. While youngsters are encouraged to learn through play, parents will find a lot of information that they can use to teach their children about the safe use of amusement rides.

提高公眾安全及節能意識
Raising Public Awareness

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學校外展活動及社區宣傳活動

我們以往舉辦的學校宣傳活動非常成功，因此在2005年，我們繼續舉辦這類活動。我們透過在學校內講解活動，將機電安全及節約能源的意識帶給逾80,000名學生，包括幼稚園及大、中、小學學生。我們認為舉辦這類教育活動可以事半功倍，因為學生們會把我們傳達的安全和節約能源信息帶給家人和朋友。

年內，在多個行業商會和政府部門的協助下，我們繼續舉辦社區宣傳活動，包括能源講座和安全研討會。

School and Community Outreach

In view of the overwhelming past response to our school programmes, we continued these in 2005 and touched more than 80,000 students at pre-school, primary, secondary and university levels. We believe that the effort we put into educating students and young people multiplies and expands beyond the classroom, as they help relay our safety and energy conservation messages to their friends and families.

Our community outreach programme of energy talks and safety seminars also continued in 2005, with the kind support of various trade associations and government departments.

1. 我們委任深受港人愛戴的卡通人物「多啦A夢」為2005年安全大使，宣揚機電安全信息。
Doraemon, one of Hong Kong's favourite cartoon characters, was appointed as an ambassador to promote E&M safety in 2005.

2. 約13,000名市民參加「機電安全嘉年華」。該活動旨在提高市民對機電安全的認識。
Some 13,000 people took part in the E&M Safety Carnival, a major community programme aimed at heightening public awareness of E&M safety.

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