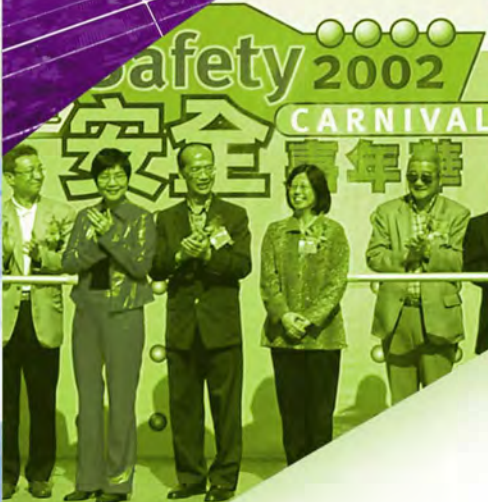


2002

機電工程署規管服務年報
Electrical and Mechanical Services Department
Regulatory Services Report

能源效益為社群

ENERGY EFFICIENCY FOR THE COMMUNITY



機電工程署
EMSD



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 ■ 誠信 ■ 可靠 ■ 承擔
Expertise Integrity Reliability Commitment

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大事回顧

ACHIEVEMENTS

OF THE YEAR

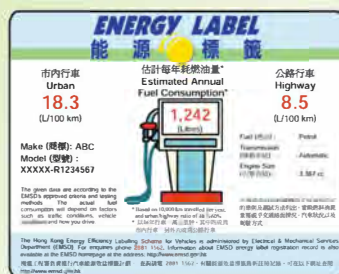
GU標誌 GU MARK



為住宅使用的氣體用具制訂強制性的銷售前認可計劃。根據計劃，由2003年1月起，所有擬於住宅使用的氣體用具，包括煮食爐、熱水爐、乾衣機及以小型石油氣瓶作燃料的手提卡式爐，均需附上一個名為「GU標誌」的認可標誌，以資識別，確保產品已達國際認可的安全標準。

A mandatory pre-market approval system for domestic gas appliances was established. According to this system, from January 2003, all domestic gas appliances, including cookers, water heaters and clothes dryers, as well as portable cassette cookers fuelled by small disposable gas cylinders, will have to bear an approved mark - the "GU Mark", an assurance of internationally recognised safety standards.

汽油私家車能源效益標籤計劃 ENERGY EFFICIENCY LABELLING SCHEME FOR PETROL PASSENGER CARS



車輛佔本港總能源消耗量相當比重，我們遂於今年將能源效益標籤計劃擴展至汽油私家車。車輛必須取得由認可實驗室所發出的車輛廢氣排放及耗油量測試報告，方可獲得該能源效益標籤。是項計劃旨在鼓勵汽車製造商及進口商提高供本港使用的私家車的能源效益。

As vehicles account for a significant share in our total energy consumption, the Energy Efficiency Labelling Scheme was extended to petrol passenger cars this year. To qualify for the scheme, cars should have vehicle emissions and fuel consumption test reports issued by recognised laboratories. The scheme aims to encourage car manufacturers and importers to improve the energy efficiency of passenger cars supplied to Hong Kong.

電力裝置的定期測試 PERIODIC TESTING OF ELECTRICAL INSTALLATIONS



凡負荷超過100安培的電力裝置，均須最少每5年進行一次電力安全檢查及領取證書，確保公眾安全。現時全港35,000幢住宅樓宇中，在本署員工的努力游說及呼籲下，加上屋宇署和民政事務總署的協助，超過96%已接受電力安全檢查和測試。

Electrical installations with a loading exceeding 100 amperes should be inspected and certified at least once every five years to ensure safety. Today, more than 96 per cent of all 35,000 residential buildings in Hong Kong have been inspected and tested for electrical safety, thanks to the relentless endeavours of our staff and the kind support of the Buildings Department and Home Affairs Department.

幼稚園外展活動
OUTREACH PROGRAMME
TO KINDERGARTENS



我們今年特別為幼稚園學生設計一項外展宣傳活動，委派了兩名青年大使，以講故事、遊戲及示範等方式，向小朋友傳遞安全使用機動遊戲機、升降機及自動梯的訊息。由於反應熱烈，我們在9個月內走訪了250多間幼稚園，向35,000名學生進行宣傳。

Two young ambassadors were appointed to lead an outreach programme designed for kindergarten students. They have visited more than 250 kindergartens and reached 35,000 pupils over a nine-month period, conveying messages about the safe use of amusement rides, lifts and escalators through story telling, games and demonstrations.

石油氣車輛計劃
LPG VEHICLE SCHEME



現時，全港近九成柴油的士已由石油氣的士取代，數目達16,000多部。加上專用石油氣加氣站網絡亦告完成，石油氣車輛計劃正式邁進第二階段，把小巴納入計劃內。現時在路面行駛的石油氣小巴逾200部。

With over 16,000 taxis - accounting for almost 90 per cent of all diesel taxis in Hong Kong - having made the switch to LPG and with the completion of the network of dedicated filling stations, the LPG vehicle scheme has progressed to the second stage targeting light buses. There are currently more than 200 LPG light buses on the road.

「機電安全香港通2002」
E&M SAFETY CAMPAIGN
2002



機電工程署今年再次舉辦大型機電安全運動，合辦機構更增加至18家。我們透過電視、電台和報章，以輕鬆、創新的手法向市民傳遞機電安全和能源效益的訊息。其中在11月舉行的戶外嘉年華會，更吸引數千名市民參加。

This year, EMSD again organised the E&M Safety Campaign, which was scaled up to include 18 collaborating organisations. It featured an innovative media programme utilising television, radio and print to promote energy efficiency and safety messages in a light-hearted fashion. The campaign climaxed in an outdoor carnival in November, which attracted thousands of people from different walks of life.

高層管理人員

SENIOR MANAGEMENT



(左起) : 吳勇勢先生、龍碧橋女士、利振球先生、黎仕海先生、何光偉先生、黃達平先生
(From Left) : Mr Augustine Ng, Ms Pamela Loong, Mr Lee Chun-kau, Mr Lai Sze-hoi, Mr Ho Kwong-wai, Mr Uy Tai-ping

署長 Director

黎仕海太平紳士

Mr Lai Sze-hoi, Roger, JP

機電工程署署長

Director of Electrical and Mechanical Services

副署長 Deputy Director

何光偉太平紳士

Mr Ho Kwong-wai, JP

副署長 / 規管服務

Deputy Director / Regulatory Services

助理署長 Assistant Directors

黃達平先生

Mr Uy Tat-ping

助理署長 / 氣體及一般法例

Assistant Director / Gas & General Legislation

利振球先生

Mr Lee Chun-kau

助理署長 / 能源效益

Assistant Director / Energy Efficiency

秘書 Secretary

吳勇勢先生

Mr Ng Yung-sai, Augustine

主任秘書

Departmental Secretary

會計師 Accountant

龍碧橋女士

Ms Loong Pik-kiu, Pamela

部門會計師

Departmental Accountant

署長報告

MESSAGE FROM THE DIRECTOR

2002年，機電工程署的規管服務在兩方面取得長足進展。我們不但再接再勵，加強規管及教育等核心工作，以確保機電安全及氣體安全，更積極在本港推廣能源效益。

為可持續發展作出貢獻

隨著公眾對政府推動可持續發展的期望日增，本署在1994年率先成立能源效益事務處，推行各種能源效益計劃，在當年的香港，可說是在一個全新的領域邁出第一步。

能源效益事務處成立以來，以其他先進國家的經驗為借鑒，在香港推出不少創新及有效的能源效益措施，重點項目包括為家庭電器及辦公室設備推出能源效益標籤計劃、進行水冷式空調系統可行性研究、制定建築物能源守則及建築物能源效益註冊計劃，以及鼓勵政府建築物及設施採用節能設備及實施能源管理計劃等。

我們亦積極參與地區及國際活動，例如與經濟發展及勞工局代表香港出席亞太區經濟合作組織的能源工作小組會議，並在亞太經合組織能源部長會議時為該局提供技術意見。這些活動既可促進經驗及資訊的交流，又能讓我們掌握最新的能源技術及業界標準。我們現正籌劃於2003年1月在香港舉辦一個國際會議，探討提高能源效益的方法，相信當局、業界及學術界定能藉此良機，在會議上交流意見和分享經驗。

此外，本署亦以身作則，採用各種方法提高能源效益。例如在設計九龍灣的機電工程署新總部時，我們會盡量加入各種節能措施，發揮示範的作用。



黎仕海太平紳士
Mr Lai Sze-hoi, Roger, JP

機電工程署不但加強規管及教育等核心工作，確保機電安全及氣體安全，更積極在本港推廣能源效益。

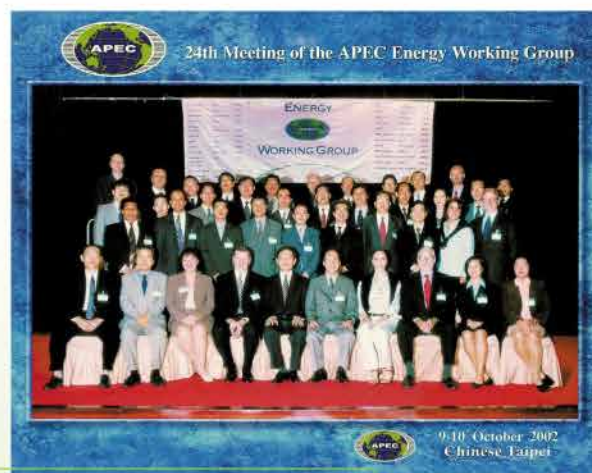
EMSD has continued to step up efforts in its core regulatory and educational functions to ensure E&M safety and gas safety, and at the same time played an increasingly active role in promoting energy efficiency in Hong Kong.

The Regulatory Services of the Electrical and Mechanical Services Department (EMSD) has made significant progress in 2002 on two fronts. It has continued to step up efforts in its core regulatory and educational functions to ensure E&M safety and gas safety, and at the same time played an increasingly active role in promoting energy efficiency in Hong Kong.

CONTRIBUTING TO SUSTAINABLE DEVELOPMENT

To respond to public expectations of government's contribution to sustainable development, we set up the Energy Efficiency Office (EEO) in 1994 as a strategic move to spearhead energy efficiency programmes, an uncharted territory in Hong Kong at that time.

Since then, EEO has sought to learn from other developed economies around the world and has undertaken many innovative and effective energy efficiency initiatives in



機電工程署積極參與地區及國際活動。
EMSD has played a prominent role in regional and international activities.

Hong Kong. Highlights include the energy efficiency labelling scheme covering household and office appliances, feasibility studies on water-cooled air-conditioning systems, the development of building energy codes and the energy efficiency registration scheme for buildings, and an array of energy saving equipment and energy management programmes for government buildings and facilities.

EMSD has also played a prominent role in regional and international activities. We represent Hong Kong alongside the Economic Development and Labour Bureau (EDLB) in the Energy Working Group of the Asia Pacific Economic Cooperation (APEC). We also support EDLB in APEC Energy Ministers Meetings. These activities facilitate experience sharing and information exchange, and keep us abreast of the latest energy technologies and industry standards. We are planning to host an international forum on energy efficiency best practices in Hong Kong in January 2003. The event promises to be an exciting opportunity for agencies, industry and academia to exchange views and share experiences.



在政府樓宇安裝光伏板的試驗計劃，亦會是機電工程署新總部的一項設施。
Pilot photovoltaic panels installation in government buildings will be featured in the new EMSD headquarters.

新總部會具備多種節能裝置，包括在天台安裝光伏板，將太陽能供電給建築物內的一座冷藏設備，而空調系統則會採用水冷裝置及蒸發式冷凝器，與傳統的氣冷式系統比較，其用電量將會減少約15%。我們亦會採用高效的T5燈及照明器連電子鎮流器，還會安裝日光導槽，把陽光引入建築物內部，並將有關裝置納入智能照明控制系統內。

為了進一步提高市民的節能意識，我們今年開始出版一份名為「智能」的刊物，每半年一期，向讀者提供有關本港節能措施的發展和應用、以及世界各地的最新節能科技的資訊。

繼續履行承擔 保障公眾安全

我們的使命是要規管機電及氣體事宜以保障市民的安全。在這方面，本人深信游說勸喻較執法更為有效。去年，我們更著重與業界溝通，讓他們了解需要遵守的事項及正在草擬的新法例，並為工程人員及承辦商舉行連串講座、座談會及其他活動，其中大部分均與商會及專業團體合辦。我們亦出版了一份專為電氣業界而設的通訊，藉此加強與業界的溝通。而各部別亦不遺餘力，繼續進行各項宣傳。

在整體的綜合宣傳方面，我們今年再次舉辦了「機電安全香港通」運動。該項宣傳活動於2001年首次舉辦，反應熱烈。今年這項活動的規模更大，合辦的機構增至18間，以社區外展活動配合傳媒宣傳，務求將機電安全的訊息傳達給各行業、各階層和各年齡組別的市民。事實上，這次運動最重要的目標，就是要透過各種途徑，確保普羅市民接收到有關的安全訊息，並在日常生活中奉行安全守則。

我們的員工更發揮創意，針對不同年齡組別的市民而設計不同類型的宣傳活動，其中為本港幼稚園推出一項為期9個月的外展活動，反應十分熱烈。我們的幼稚園大使探訪了250間幼稚園共35,000多名學生，以生動活潑的手法，運用兒童喜愛的卡通人物進行講解，並透過故事和遊戲，為小朋友解釋安全訊息。

最後本人謹向副署長 / 規管服務何光偉先生及其隊伍致謝，他們努力不懈，令香港成為一個更安全及更講求能源效益的城市。本署過去一年在規管服務方面成績斐然，他們實在功不可沒。

黎仕海

機電工程署署長

黎仕海

It is also appropriate that EMSD leads by example in energy efficiency practices. I am pleased to report that as we design the new EMSD headquarters in Kowloon Bay, we shall ensure that energy efficiency measures are incorporated wherever possible.

Among the various energy efficiency measures to be integrated into the new headquarters is the installation of photovoltaic panels on the rooftop to use solar energy to power a refrigeration plant within the building. A water-cooled chiller with evaporative condenser will form the core part of the air-conditioning installation, which will reduce energy consumption by about 15 per cent compared to conventional air-cooled systems. High efficiency T5 lamps and luminaries with electronic ballasts will be used. A sun-light pipe will be installed to direct daylight to inner zones of the building and this will be integrated into an intelligent lighting control system.

In an effort to further enhance public awareness on energy efficiency, we started issuing a publication known as *Energy WITS* this year. *Energy WITS*, which is published twice a year, serves to provide a spectrum of information on the development and application of energy conservation initiatives in the territory as well as the latest energy saving technologies being developed in other parts of the world.

CONTINUING OUR SAFETY COMMITMENTS TO THE COMMUNITY

As regards our mission to protect public safety in E&M and gas matters, I have always believed that persuasion is more

effective than policing. In the year under review, our emphasis was on communicating with the trade to facilitate their understanding of compliance issues and new legislation in the pipeline. A series of talks, seminars and other activities were organised for workers and contractors, mostly in collaboration with trade associations and professional bodies. We also launched a newsletter to enhance direct dialogue with the electrical trade. The various divisions continued to be very active in their respective publicity programmes.

At the corporate level, we again organised the E&M Safety Campaign. Following the success of the first promotional programme in 2001, this year's campaign was scaled up to include 18 collaborating organisations. We used a mix of community outreach activities and mass media advertising to reach people of different ages and from different walks of life. This furthered one of our most important aims for the campaign, that is, making use of all available channels to ensure that the man in the street receives our safety messages and puts them into practice.

Our innovative programme with kindergartens met with an overwhelming response. Our kindergarten ambassadors visited more than 35,000 pupils in 250 schools in a nine-month programme, conveying safety messages through story telling, games and vivid demonstrations complete with children's favourite cartoon characters. This is an example of how creativity helps us reach out to people of different age groups.

Last but not least, I would like to thank our Deputy Director of Regulatory Services, Mr K W Ho and his team for their good work in the past year, and in particular for their relentless endeavour to make Hong Kong a safer and more energy efficient city.



Roger S H Lai

Director of Electrical and Mechanical Services



今年「機電安全香港通」運動的規模更大，合辦的機構增至18間。
This year's E&M Safety Campaign has been scaled up to include 18 collaborating organisations.

業務回顧 OPERATIONS REVIEW



何光偉太平紳士
Mr Ho Kwong-wai, JP

2002年業務回顧，會集中介紹本署在推廣能源效益方面的實質成果，以及在機電及氣體規管架構方面的新猷。

能源效益及節省支出

2002年業務回顧，會集中介紹本署在推廣能源效益方面的實質成果，以及在機電及氣體規管架構方面的新猷。

透過能源效益事務處的各種節能措施，估計本港今年節省了1,310太焦耳的能源，即3.3億元。我們估計溫室氣體的排放亦大幅減少，二氧化碳的排放量減少約330,000公噸。

過去十年，本港的總能源消耗量雖然不斷上升，但以每一元本地生產總值計算的總消耗量，卻不斷下降。換言之，我們比以前更懂得善用能源。儘管如此，我們仍不應自滿。

在能源最終用途總消耗量方面，商業界別為消耗能源最多的界別之一，且比重不斷增加，當中又以商業大廈耗用最多能源。有鑑於此，我們於1998年引入建築物能源守則及建築物能源效益註冊計劃，為建築師及發展商提供有用的參考資料及基準，俾能設計更節省能源的建築物，並為現有的建築物再配置節能設備。

商業大廈耗用的能源，絕大部分用於空調方面。因此，我們一直研究能否廣泛使用更節省能源的水冷式空調系統。繼初步研究後，我們又特別為採用區域性供冷系統進行研究。我們選擇了兩個截然不同的地區進行研究，即東南九龍發展區及灣仔和銅鑼灣區，前者是個全新的發展區，後者是典型的已發展地區，內有辦公室、酒店和商業大廈。



我們在灣仔政府大樓安裝光伏板，測試能否在本港應用太陽能科技。

Photovoltaic panels are installed at Wanchai Tower to test the applicability of solar energy technologies in Hong Kong.

Our review for 2002 shall focus on EMSD's tangible achievements in energy efficiency, and on new initiatives in the E&M and gas regulatory framework.

ENERGY EFFICIENCY AND SAVINGS

Our review for 2002 shall focus on EMSD's tangible achievements in energy efficiency, and on new initiatives in the E&M and gas regulatory framework.

Thanks to EEO's energy efficiency initiatives, we saved an estimated 1,310 Tera Joules of energy for Hong Kong this year, representing \$330 million in monetary terms. We also estimate a significant reduction in greenhouse gas emissions - amounting to about 330,000 tonnes of carbon dioxide.

While we witnessed an upward trend in total energy consumption over the past decade, total energy end-use per

dollar GDP has been decreasing. In other words, we are using energy more productively and efficiently. Nonetheless, we must not be complacent.

The commercial sector accounts for a significant and growing share of total energy end-use, with commercial buildings being the sector's primary consumer. In view of this, we introduced the building energy codes and the energy efficiency registration scheme for buildings in 1998, providing a useful reference and benchmarks for architects and developers to design more energy-efficient buildings and to retrofit existing ones.

我們就香港能否應用再生能源而進行的研究，已邁進第二階段，並於灣仔政府大樓進行示範計劃。我們現正於大樓的天台安裝光伏板，日後蒐集所得的技術數據會用於表現分析。此外，我們亦正研究風力發電，並已預備在全港各地進行實地測量。

能源效益事務處引入了不少節能設備，而T5燈及照明器乃其中成功例子。我們在政府場地進行了兩項T5照明系統的試驗計劃，發現不但可以節省40%能源，還能夠為使用者提供較佳的照明。試驗結果在照明業界引起十分正面的迴響，越來越多發展商也在其新建築物中安裝T5照明系統。

我們推行的家庭電器和辦公室設備能源效益標籤計劃，已有超過1,500款不同型號的產品參與，估計市場滲透率介乎30%至70%，而因推行計劃而節省的能源，佔本港全年能源節省量的44%。年內，我們已將標籤計劃的範圍擴展至汽油私家車，並正計劃在短期內將氣體用具納入有關計劃。

安全措施

為了保障公眾安全，我們今年推行了一系列的措施。我們加強和內地的質量監督檢驗及檢疫總局合作，務求妥善管制電氣產品、氣體用具和升降機及自動梯品質。由於本港有大量不同種類的產品由內地進口，若雙方能加強合作，在有需要核證有關產品的質素時，可加快檢查速度，俾能及時採取行動。



我們加強和內地的質量監督檢驗及檢疫總局合作，務求妥善管制電氣產品、氣體用具和升降機及自動梯品質標準。

We have fostered closer cooperation with the Administration of the People's Republic of China for Quality, Supervision, Inspection and Quarantine to achieve better control over the quality standard of electrical products, gas appliances and lifts and escalators.



全港35,000幢住宅樓宇的定期電力裝置檢查工作，現已完成了96%。
As regards the periodic inspection of electrical installations, 96 per cent of all 35,000 residential buildings in Hong Kong have been completed.

我們亦引入新的審批計劃，以加強對氣體用具的品質管制，此計劃將於2003年生效。

現時，本港已有16,000多部的士轉用石油氣，加上專用石油氣加氣站網絡亦已建立，石油氣車輛計劃遂邁進第二階段，而對象則為小巴。我們會繼續提供技術意見和支援。

此外，全港35,000幢住宅樓宇的定期電力裝置檢查工作，在屋宇署和民政事務總署的協助下，現已完成了96%。

由於本港今年曾舉行多個大型嘉年華會，機動遊戲機的安全問題引起了市民的關注。而在我們的監管下，這些遊戲機並未發生任何機械故障。我們亦開始與負責香港迪士尼主題公園及東涌纜車工程的小組聯絡，確保這些設備日後投入運作時，高度安全。

在後面的章節裏，我們會詳細介紹各部別於2002年的工作進展。全球各地，規管當局都必須努力不懈，耐心工作，推行的措施才能取得成果。本人謹向所有員工衷心致謝，他們全心全意，辛勤工作，值得表揚，我們熱切期望，2003年亦將是成果豐碩的一年。

何光偉

副署長 / 規管服務

何光偉

Air-conditioning takes the lion's share of energy consumption in commercial buildings, which is why we have been studying the possibility of wider use of the more energy-efficient water-cooled air-conditioning system. As a follow-up to a preliminary study, we have proceeded to conduct implementation studies with a particular focus on district cooling systems. Two distinct districts were selected - South East Kowloon Development and Wanchai and Causeway Bay, the former being an entirely new development while the latter is a typical existing district with a mix of offices, hotels and commercial developments.

Our study of potential applications of renewable energy has now moved into its second stage with a demonstration project at Wanchai Tower. Solar photovoltaic panels are being installed on the rooftop and technical data will be collected for performance analysis. Wind power is also under study and preparatory work for a territory-wide field-based measurement programme has begun.

T5 lamps and luminaries are among the most successful energy saving equipment introduced by EEO. Two pilot projects to use the T5 lighting system at government venues have shown that a 40 per cent energy saving is achievable, along with better lighting quality for users. These results have had very positive implications in the lighting industry, with more and more developers installing the T5 lighting system in new developments.

The energy efficiency labelling scheme for household appliances and office equipment - accounting for 44 per cent of energy savings this year - now covers more than 1,500 models with an estimated market penetration of between 30 to 70 per cent. The scheme has been extended to petrol passenger cars during the year, with plans in hand to cover gas appliances in the near future.

SAFETY INITIATIVES

To fulfil our role in protecting public safety, we have this year focused on a number of initiatives. We have fostered closer cooperation with the Administration of the People's Republic of China for Quality, Supervision, Inspection and Quarantine to achieve better control over the quality standard of electrical

products, gas appliances and lifts and escalators. This is particularly important given the huge variety and quantity of products imported from the mainland. In the event of a need to verify the quality of a product, it also permits speedier checking and allows more timely action to be taken.

We have also stepped up our quality control of gas appliances with the introduction of a new approval scheme, which will come into effect in 2003.

With over 16,000 taxis having made the switch to LPG and with the completion of the network of filling stations, the LPG vehicle scheme has progressed to the second stage targeting light buses. We continue to provide technical advice and support.

As regards the periodic inspection of electrical installations, we are pleased to report that 96 per cent of all 35,000 residential buildings in Hong Kong have now been tested, thanks to the assistance of the Buildings Department and the Home Affairs Department.

Amusement rides were in the limelight this year as a number of large-scale carnivals took place in Hong Kong. We are proud to report that there were no incidents of mechanical failure with these rides. We have also begun to liaise with the Disney Theme Park and the Tung Chung cable car project teams to ensure the highest level of safety for Hong Kong when these facilities come on-line in the future.

In the following pages, we detail the progress of each of our divisions this year. It is a characteristic of regulatory services worldwide that patience and perseverance are often required for initiatives to yield results. I would like to thank all staff for their dedication and hard work, and join them in looking forward to another year of achievement in 2003.



Ho Kwong-wai

Deputy Director / Regulatory Services

推廣能源效益

PROMOTING ENERGY EFFICIENCY

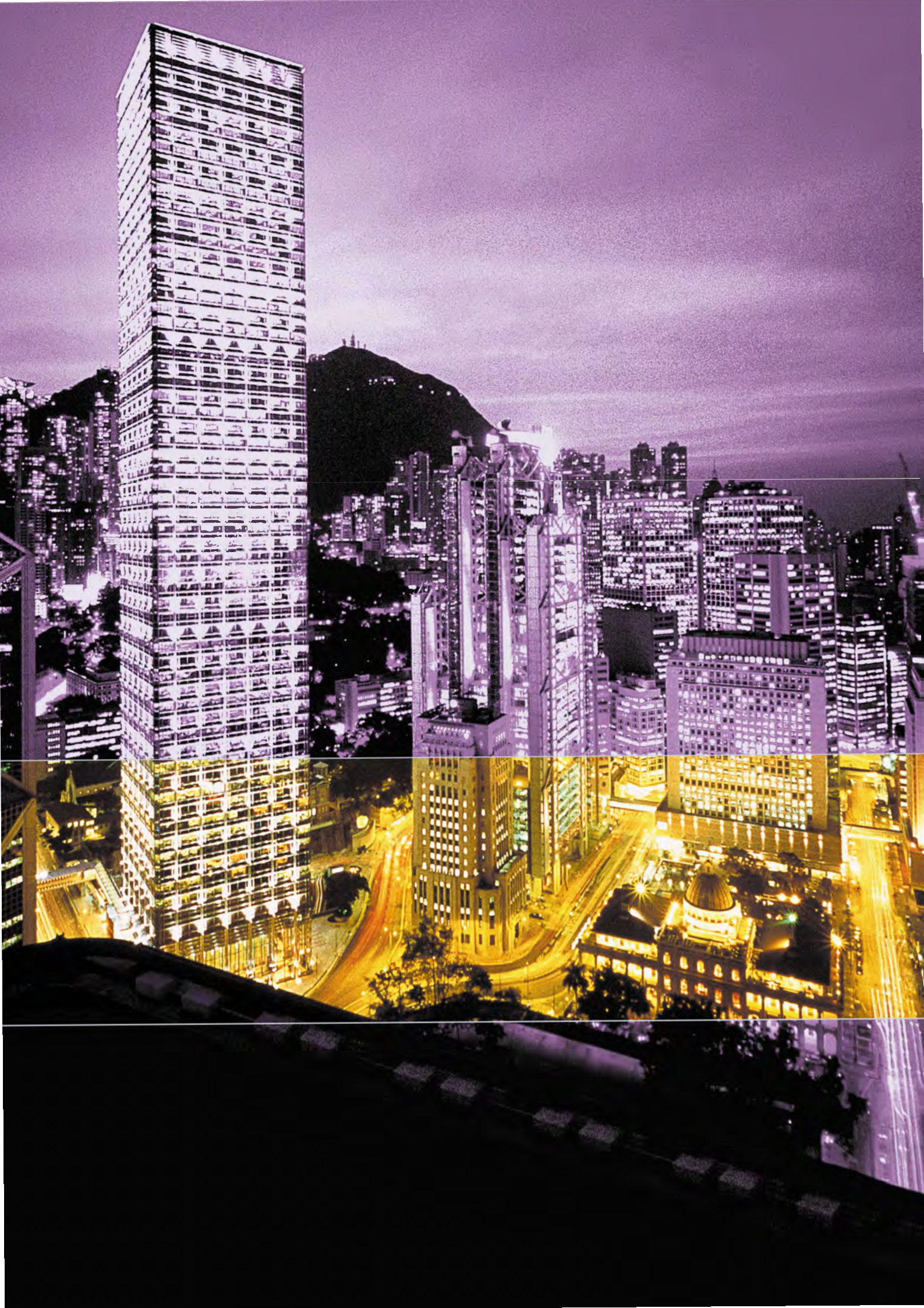
隨著公眾對政府推動可持續發展的期望日增，能源效益事務處自1994年成立以來已推出多項能源效益計劃。

To respond to public expectations of government's contribution to sustainable development, the Energy Efficiency Office has spearheaded a number of energy efficiency programmes since its establishment in 1994.



符合建築物能源守則的大廈，可獲得註冊證書。

Registration certificate issued to buildings meeting the Building Energy Codes.



推廣能源效益



我們將會收集有關技術數據，以監察太陽能光伏板的效能和表現。
Technical data will be collected to monitor the effectiveness and performance of the solar photovoltaic panels.

能源效益事務處於1994年成立，宗旨是在香港推動能源效益及節約計劃。能源效益事務處的工作結合了我們對最新科技的了解，以及對香港社會需求的認識。能源效益事務處負責制訂指引及出版工作守則，並積極參與研究有效使用及節約電力的工作小組和相關的委員會。為了協助香港節省能源和保護、保育及改善環境，我們推行了連串措施，包括推行能源管理和能源需求管理計劃、管理最終能源用途資料庫、制訂基準和推行能源效益標籤計劃。能源效益事務處亦率先使用創新的節能科技，特別是空調、照明和升降機及自動梯的控制系統。我們在這方面的成績，有助香港的可持續發展。

引入最新的節能設備

一直以來，機電工程署致力研究適用於香港的最新能源科技。我們最近引入的新T5熒光燈及照明器，便是其中一個例子。這類照明器耗電量少，而對環境造成的影響亦相對較輕微。我們在九龍區兩個大型室內運動場進行了試驗計劃，把新的高輸出T5照明系統與現時使用的高位照明系統進行比較。在其中一項試驗計劃中，我們更採用了數碼定位照明界面調光控制系統，控制各種照明功能，以達到不同的光暗效果。

試驗結果顯示T5照明系統的能源效益明顯較高，可節省逾五成能源。此外，該照明系統的平均亮度較高位照明系統高出58%；由於照明質素較佳，深獲場地使用者好評。

照明業對試驗計劃的反應十分良好，製造商和使用者越來越瞭解 T5照明科技及有關產品的優點，市場需求愈高，亦令該類照明器的價格下調，令有關產品對業界更具吸引力。現時，主要發展商均指定在其新落成的建築物內安裝T5燈。



機電工程署一直致力研究適用於香港的最新能源科技。
One of EMSD's ongoing pursuits is the exploration of the latest energy technology for application in Hong Kong.

Promoting Energy Efficiency

The Energy Efficiency Office was established in 1994 to spearhead the drive for energy efficiency and conservation programmes in Hong Kong. We combine an in-depth understanding of the latest technological breakthroughs with knowledge of the precise needs of the Hong Kong community. The Office works to establish guidelines and issue codes of practice, and is actively involved in working groups and related committees that investigate the efficient use and conservation of electricity. To help Hong Kong save energy and protect, sustain and improve its environment, we have implemented a range of initiatives, including Energy Management and Demand Side Management programmes, energy end-use database management, benchmarking, and an energy efficiency labelling scheme. The Office is also engaged in pioneering the use of innovative energy-saving technologies, particularly in air conditioning, lighting and lift and escalator control systems. Our successes in this direction will contribute to the sustainable development of Hong Kong.

INTRODUCING THE LATEST ENERGY EFFICIENT EQUIPMENT

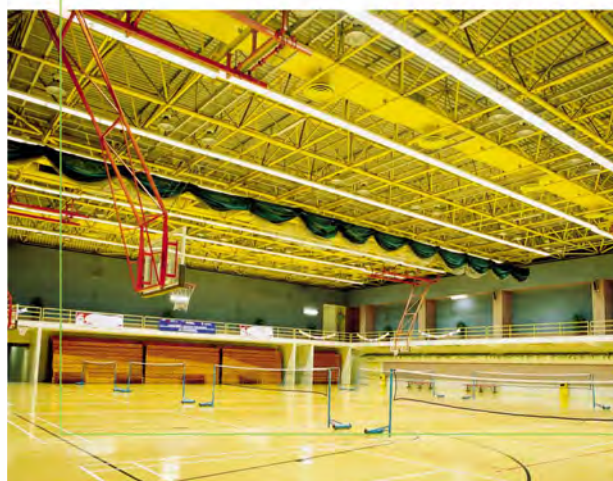
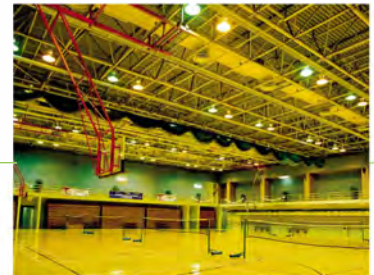
One of EMSD's ongoing pursuits is the exploration of the latest energy technology for application in Hong Kong. The introduction of the new T5 fluorescent lamps and luminaries - designed to optimise energy consumption and to minimise impact on the environment - is but one good example of our recent endeavours. Pilot projects at two major indoor games halls in Kowloon were conducted to compare the new high-output T5 lighting system with the existing high-bay lighting system. A Digital Addressable Lighting Interface (DALI) dimmable control system to manage the various functions and illumination requirements was also used in one of the pilot projects.

Results show that the T5 lighting system is far more energy efficient - with an energy saving of more than 50 per cent. Moreover, it also boasts an average luminance 58 per cent higher

than that of the high-bay lighting system, and is favoured by users for its better lighting quality.

The pilot projects have generated very positive feedback from the lighting industry. Both manufacturers and users have become more aware of the benefits of the T5 lighting technology and related products. The new market

trend has further driven down product pricing, making the technology even more attractive to the trade. T5 lamps have now been specified by major developers in their new buildings.



在大型室內運動場進行了試驗計劃，把新的高輸出T5照明系統（左圖）與高位照明系統（上圖）進行比較。

Pilot project is conducted to compare the new high-output T5 lighting system (left) with the high-bay lighting system (above) at an indoor games hall.

推廣節能建築物

商業界別中，以商業大廈耗用最多能源，達能源最終用途總消耗量的34%。因此，我們在1998年推行建築物能源效益註冊計劃，鼓勵發展商和建築師採用節能的建築設計。該計劃屬自願參與性質，旨在推行建築物能源守則，這些守則根據有關裝置的耗電量、系統設計及監管規則等，為建築物定出能源效益的最低要求。

現有的四套建築物能源守則均由機電工程署制訂，即空調、照明、電力裝置和升降機及自動梯守則。其中電力裝置和升降機及自動梯的守則為同類守則之先驅，亦引起了本港和美國業界的關注。美國電機暨電子工程師學會更考慮將該兩套守則引進該會的標準內。

遵守能源守則不但確保裝置達到能源效益的最低要求，減少耗電量及有助保護環境，更可為業主和租客節省金錢。符合守則所訂標準的建築物會獲頒註冊證書，並可獲授權使用節能建築物標誌，作宣傳之用。最近的檢討結果顯示，該計劃頗受發展商、物業業主、建築師和工程師歡迎。自推行該計劃以來，已發出逾100張證書。



建築物能源效益註冊計劃旨在鼓勵發展商和建築師採用節能的建築設計。
The Energy Efficiency Registration Scheme for Buildings encourages developers and architects to adopt energy efficient building designs.

機電工程署在東南九龍發展區進行研究，以確定採用區域性供冷系統在技術、環境及機制方面的要求。

A study on District Cooling System is being conducted to identify the technical, environmental, and institutional requirements of implementation in South East Kowloon Development.



為了進一步推廣節能建築物，我們將會委託顧問公司進行一項研究，目的是採用總能源預算的方法，編製以表現為本的建築物能源守則。該守則會涵蓋現行守則內未有提及的節能裝置，例如在建築物的設計上利用天然光以及循環使用廢熱。新守則旨在提倡更高層次的創新建築設計。

水冷式空調系統

由於空調在本港電力最終用途上佔相當比重，所以政府較早時已著手研究本港使用水冷式空調系統的可行性，以及該系統在整體經濟和環保方面帶來的好處。如全港全面以節能水冷式空調系統取代現有的氣冷式空調系統，每年可減少釋放溫室氣體60萬噸，非住宅樓宇在空調方面可節省能源達7%至10%。以目前的電費水平計算，每年可節省電費9.77億元至15億元。

區域性供冷系統

區域性供冷系統是水冷式空調系統的一種，可為發展商、業主、租戶及整個社會帶來實質好處。機電工程署進行了兩項研究，一項在新的東南九龍發展區，另一項則在現有的灣仔及銅鑼灣區。

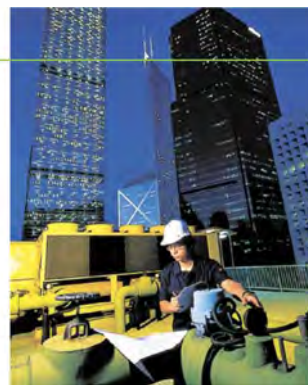
東南九龍發展區的研究正在進行，目的是確定採用區域性供冷系統在



技術、環境及機制方面的要求，包括立法、規管，財務、經濟及土地使用等事宜。該系統的客戶對象包括商業樓宇及購物商場、政府及社區建築物，以及地鐵站。

灣仔及銅鑼灣區的研究於2001年12月展開，將於2003年完成。由於區內有辦公室、商業樓宇、酒店及政府合署，故預計該區為發展水冷式空調系統的理想地點。

我們現正就該兩區分階段採用水冷式空調系統制定有關的計劃和策略，同時會考慮兩區的未來發展、交通安排、土地用途、財務、基建限制、規管及機制架構、水冷式空調系統的技術發展，以及該系統對環境造成的影響等複雜事宜，亦會盡量減低對區內商戶及居民造成的不便。



以水冷式空調系統取代現有的氣冷式系統可為非住宅樓宇在空調方面節省能源達7%至10%。
Conversion of the existing air-cooled systems to WACS could save 7 to 10 per cent of energy used for air conditioning in non-domestic buildings.

PROMOTING ENERGY EFFICIENCY BUILDINGS

Commercial buildings are the primary energy consumer in the commercial sector, accounting for 34 per cent of total energy end-use. It was in this context that the Energy Efficiency Registration Scheme for Buildings was launched in 1998 to encourage developers and architects to adopt energy efficient building designs. The scheme provides a voluntary framework for implementing the Building Energy Codes, which set out the minimum energy efficiency requirements for buildings in terms of power consumption, system design, and monitoring provisions for these installations.

The current set of four Building Energy Codes, all developed by EMSD, covers air-conditioning, lighting, electrical, and lift and escalator systems. The codes for electrical installations and lift and escalator installations are the first of their kind, and have drawn widespread interest from the industry - both locally and in the United States, where the Institute of Electrical and Electronics Engineers is considering including them in their standards.

Compliance with the codes ensures that the installations achieve a minimum level of energy efficiency, reduce power consumption and are conducive to environmental protection. In turn, this translates into savings in money for landlords and tenants. Those meeting the code standards will be issued a registration certificate and allowed to use the Energy Efficiency Building logo for publicity purposes. Recent reviews show that the scheme and the codes are well received by developers, property

owners, architects and engineers. More than 100 certificates have been awarded so far.

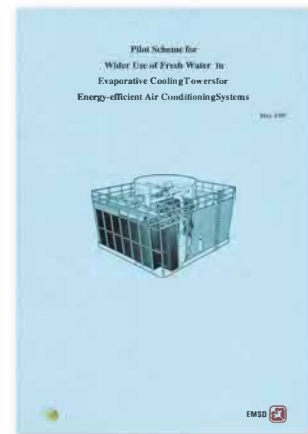
Following up on the promotion of energy efficient buildings, a consultancy study will be commissioned to develop a performance-based code of practice for buildings taking a total-energy-budget approach. The code will cover energy efficient features currently not included in the existing codes, such as the use of natural light in building design and the recycling of waste heat. The new code aims to advocate a higher level of innovative building design.

WATER-COOLED AIR CONDITIONING SYSTEMS

With air-conditioning accounting for a significant share of electricity end-use in Hong Kong, the government embarked some time ago on a study of the viability and overall economic and environmental benefits of using Water-cooled Air Conditioning Systems (WACS) in the territory. Territory-wide conversion of air-cooled air-conditioning systems to the more energy-efficient WACS has a potential to reduce greenhouse gas emissions by 600,000 tonnes a year, and save 7 to 10 per cent of energy used for air conditioning in non-domestic buildings. This translates into between \$977 million and \$1,500 million in energy savings a year, at current electricity costs.

District Cooling System

District Cooling System (DCS) has been identified as a type of WACS that can bring tangible benefits to developers, landlords and tenants as well as society as a whole. EMSD was tasked with conducting two implementation studies: one in South East Kowloon Development



機電工程署正推行一項試驗計劃，推廣在非住宅樓宇更廣泛地使用淡水的蒸發式冷卻塔。

A pilot scheme to promote the wider use of fresh water in evaporative cooling towers in non-domestic buildings is underway.

(SEKD), and one in an existing district, Wanchai and Causeway Bay (WCCB).

The SEKD study, which is in progress, is to identify the technical, environmental, and institutional requirements of DCS implementation, including legislative, regulatory, financial, economic and land use issues. Potential customers may include commercial buildings and shopping malls, government and community buildings, and underground railway stations.

The WCCB study commenced in December 2001 for completion in 2003. As the district has a balanced mix of offices, commercial developments, hotels and government offices, it is expected to have good potential for the development of WACS.

We are now formulating plans and strategies for the phased implementation of WACS in the two districts, taking into account the complex issues of future district development, traffic arrangements, land uses, financing, infrastructural constraints, regulatory and institutional framework, WACS technology development and environmental impact, and with a view to minimising the disruption to business and the local community.



能源效益標籤計劃覆蓋家庭電器及辦公室設備。
The Energy Efficiency Labelling Scheme covers both household appliances and office equipment.

廣泛使用淡水於蒸發式冷卻塔

初步研究顯示，大廈業主如要採用水冷式空調系統，最簡易的做法是使用蒸發式冷卻塔（俗稱水塔）。與氣冷式空調系統比較，蒸發式冷卻塔可省能源7%至17%，並可大大減少釋放溫室氣體。

在2000年，一個由機電工程署統籌的跨部門工作小組推行一項為期兩年的試驗計劃，推廣在非住宅樓宇更廣泛地使用淡水的蒸發式冷卻塔。該計劃放寬了水冷式空調系統不得使用淡水的限制，並設立一個註冊和發牌制度，以確保冷卻塔在設計、操作及維修方面均妥善安全。該計劃至今已擴展至28個指定小區。在撰寫本文時，我們共接獲14份申請，牽涉總樓面面積約80萬平方米，預計每年可節省9百萬度電，溫室氣體釋放方面則會減少5,000噸二氧化碳。

用電需求管理

為了推廣能源效益及節約能源，機電工程署協助兩間電力公司發展用電需求管理計劃。香港現時推行的用電需求管理計劃主要分為三類：能源效益計劃積極鼓勵用戶善用電力，購買和使用節能產品，從而減低高峰時段的用電需求及整體耗電量；削減高峰負荷計劃則鼓勵減低高峰時段的用電量；負荷轉移計劃旨在把高峰時段的用電量轉移至非高峰時段。

該項計劃為期三年，由2000年7月起分階段推行。為非住宅用戶推出的兩個回扣計劃鼓勵客戶採用節能的照明、通風和空調設備。截至2002年6月底，接獲及已處理的申請逾4,000宗，預計每年可節省1.54億度電，相等於逾25,000個用戶的一年耗電量。

能源效益標籤計劃

我們自1995年推出能源效益標籤計劃以來，成績令人滿意，該計劃所節省的能源現佔全年估計總能源節省量的44%。有見運輸界別耗用的能源佔總能源消耗量逾三分之一，而本港的登記車輛又以汽油私家車為主，故我們將該計劃於今年擴展至汽油私家車。

要符合汽車能源效益標籤註冊資格，車輛必須取得由認可實驗所發出的車輛廢氣排放及耗油量測試報告。該計劃旨在鼓勵汽車製造商及進口商提高供本港使用的私家車的能源效益。

除使用汽油的私家車外，該計劃現包括7類家庭電器（家用雪櫃、冷氣機、洗衣機、電乾衣機、緊湊型節能熒光燈、儲水式電熱水爐和電飯煲）及兩類辦公室設備（影印機和多功能辦公室裝置），覆蓋1,500款型號產品。我們正籌備在2002年年底把抽濕機和鐳射打印機納入計劃內。調查結果顯示，附有標籤的產品的市場滲透率為30%至70%。

Wider Use of Fresh Water in Evaporative Cooling Towers

The use of evaporative cooling towers was found to be the most convenient way for building owners to adopt WACS, according to a preliminary study. It will achieve an energy saving of 7 to 17 per cent when compared with the air-cooled air-conditioning system, and will significantly reduce greenhouse gas emissions as well.



能源效益標籤計劃自1995年推出以來，成績令人滿意。
The Energy Efficiency Labelling Scheme has been a success since its inception in 1995.

An interdepartmental working group coordinated by EMSD launched a two-year pilot scheme in 2000 to promote the wider use of fresh water in evaporative cooling towers in non-domestic buildings. It worked to relax the restriction on banning of use of fresh water for WACS and set up a registration and licensing system to ensure proper design, operation and maintenance of cooling towers. The scheme has now been expanded to cover 28 designated areas. At the time of writing, there were 14 applications with a total floor area of about 800,000 square metres. It is estimated that the annual energy savings would be 9,000 MWh, and that greenhouse gas emissions would be reduced by 5,000 tonnes of carbon dioxide.

DEMAND SIDE MANAGEMENT

With the aim of promoting energy efficiency and conservation, EMSD was tasked with providing assistance in the development of Demand Side Management (DSM) programmes with the power companies. Currently there are three main types of DSM programmes in Hong Kong. Energy Efficiency Programmes actively

encourage users to use electricity wisely and to buy and use energy efficient appliances, thus reducing peak demands and the overall consumption of electricity. Peak Clipping Programmes encourage the reduction of electricity demand during peak periods, and Load Shifting Programmes shift consumption from peak periods to off-peak periods.

The three-year programmes were rolled out in phases from July 2000. The two rebate programmes for non-domestic customers switching to energy efficient appliances for lighting, ventilation and air-conditioning were a success. Up to the end of June 2002, more than 4,000 applications were received and processed, representing a projected annual energy saving of 154 GWh - equivalent to the annual consumption of over 25,000 households.

ENERGY EFFICIENCY LABELLING SCHEME

The Energy Efficiency Labelling Scheme has been a success since its inception in 1995 and accounts for about 44 per cent of the estimated total annual energy saving so far achieved. This year, the scheme was extended to petrol passenger cars. The transport sector

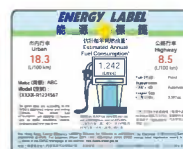
occupies more than one-third of our total energy consumption and petrol passenger cars make up the majority of registered vehicles in Hong Kong.

To qualify for registration under the scheme, cars should have vehicle emissions and fuel consumption test reports issued by recognised laboratories. The scheme aims to encourage car manufacturers and importers to improve the energy efficiency of passenger cars supplied to Hong Kong.

In addition to petrol passenger cars, the scheme now covers more than 1,500 products in seven categories of household appliances (household refrigerators, air-conditioners, washing machines, electric clothes dryers, compact fluorescent lamps, electric storage water heaters and rice cookers) and two types of office equipment (photocopiers and multifunction devices). Plans are in hand to include dehumidifiers and laser printers under the scheme by the end of 2002. Survey findings show that the market penetration of labelled models with respect to the total models in the market ranged from 30 to 70 per cent.



► 能源效益標籤計劃擴展至汽油私家車。
The Energy Efficiency Labelling Scheme has been extended to petrol passenger cars.



◀ 我們今年把小巴納入石油氣車輛計劃內。
The LPG Vehicle Scheme was extended to light buses this year.

石油氣車輛計劃

石油氣車輛計劃是政府減少車輛廢氣排放量及改善整體空氣質素的主要措施之一。機電工程署在該計劃上負責多項工作，包括審批和監管石油氣車輛、加氣站及維修站，確保運作安全，並批核曾受訓的石油氣車輛維修技工的註冊申請。

全港近九成柴油的士已由石油氣的士取代。今年，我們更把小巴納入計劃內。現時在路面行駛的石油氣小巴逾200部。此外，立法會已批准一項資助計劃，鼓勵有關經營者轉用較環保的石油氣或電動車輛。

在撰寫本文時，全港共有43個車用石油氣加氣站，當中包括12個專用加氣站。機電工程署就專用石油氣加氣站的收費上限機制提供專業意見，而這機制亦運作良好。由於專用石油氣加氣站主導了車用石油氣市場，故即使汽油和柴油的價格波動，所有加氣站的車用石油氣價格仍然較為穩定。

此外，現時已有28個石油氣車輛維修站投入服務，另有三個維修站正在興建。在批核石油氣車輛維修技工註冊申請方面，約有800名已受訓的技工已獲機電工程署註冊。職業訓練局將繼續每年培訓400名石油氣車輛維修技工，確保市場上有足夠人手負責保養維修的工作。

該計劃實施後，車輛廢氣的污染物大大減少，成績令人滿意。在本港，車輛排放的懸浮粒子和氮氧化物已分別減少25%和6%。

再生能源

顧問公司就本港能否使用再生能源進行的第一階段研究即將完成，該項研究旨在對各種能源科技作出評估，並制訂有關的實施策略。

第二階段研究包括在灣仔政府大樓進行一項示範計劃。我們現正在大樓外安裝光伏板，以測試能否在本港實際

應用太陽能科技。我們採用了三類光伏板，即在天台安裝支架式光伏板、在外牆安裝遮光罩式光伏板及在玻璃大門入口頂部安裝天窗式光伏板，總面積為500平方米，總輸出功率則達55千瓦。我們將於2003年收集有關數據，以監察光伏系統的效能和表現。

除了研究能否應用太陽光伏板技術外，機電工程署亦會著手進行一項實地量度風速計劃，探討在本港指定地點使用風力能源的可行性。有關準備工作已經展開，而該計劃定於2004年年中完成。



灣仔政府大樓正安裝光伏板，研究應用太陽能科技。
Installation of photovoltaic panels at work at Wanchai Tower to investigate the application of solar PV technologies.

LPG VEHICLE SCHEME

This scheme is one of a number of government initiatives to reduce vehicle emissions and improve overall air quality. EMSD plays a multilevel role, which includes the approval and monitoring of the safe operation of LPG vehicles, filling stations, and maintenance workshops as well as the authorisation of trained LPG mechanics.

Almost 90 per cent of all diesel taxis in Hong Kong have been replaced with LPG models. The scheme was extended to light buses this year and there are currently more than 200 LPG light buses on the road. Moreover, LegCo has approved a funding scheme as an incentive for operators to switch to the more environment-friendly LPG or electric models.

At the time of writing, there were already 43 auto-LPG filling stations, including 12 dedicated ones, in service throughout the territory. EMSD provides expert advice on the ceiling price

mechanism for dedicated LPG filling stations, which has proven to function satisfactorily. With dedicated filling stations leading the auto-LPG market, the price of auto-LPG at all filling stations has been fairly stable despite fluctuations in petrol and diesel prices.

Moreover, there are 28 LPG vehicle maintenance workshops in service, with three more under construction. With regard to the authorisation of LPG mechanics, there are about 800 trained mechanics registered with EMSD, and the Vocational Training Council will continue to train 400 LPG mechanics a year to ensure sufficient repair and maintenance support in the market.

The success of the scheme is reflected in the significant drop in pollutants of vehicle emissions - respirable suspended particulates and nitrogen oxide emitted by vehicles in the territory have been reduced by 25 per cent and 6 per cent respectively.



已有28個石油氣車輛維修站投入服務。
Twenty-eight LPG vehicle maintenance workshops are in service.

RENEWABLE ENERGY

The first stage of the consultancy study on potential applications of renewable energy in Hong Kong is about to complete, with the aim of having various energy technologies evaluated and an implementation strategy formulated.

The second stage consists of a demonstration project at Wanchai Tower, where photovoltaic (PV) panels are being installed outside the building to test the applicability of solar energy technologies in Hong Kong. Three types of PV panels measuring 500 square metres are in use - rack-type on the rooftop, sunshade screen-type on the external facade and skylight-type at the glass entrance - and boast a total rated power output of 55 kW. Data will be collected throughout 2003 to monitor the effectiveness and performance of the PV system.

Apart from investigating the application of solar PV technologies, EMSD will also embark on a field-based wind measurement programme to explore the feasibility of utilising wind energy at specific sites in the territory. Preparatory work has commenced and the programme is scheduled for completion by mid-2004.



全港共有43個車用石油氣加氣站，當中包括12個專用加氣站。
There are 43 auto-LPG filling stations, including 12 dedicated ones, in service throughout the territory.

保障公眾安全 PROTECTING PUBLIC SAFETY

機電工程署繼續加強規管氣體和機電產品及設施等核心工作，確保公眾安全。

EMSD has continued to step up efforts in its core regulatory functions to ensure public safety in electrical, mechanical and gas applications.



機電工程署每年為各式各樣的機械裝置進行超過7,000次巡查。

EMSD conducts more than 7,000 inspections on mechanical installations a year.



保障公眾安全



所有獲發「GU標誌」的氣體用具均須接受本港實驗所的品质保證檢查。
All approved gas appliances with the "GU Mark" have been subjected to quality assurance checks in Hong Kong laboratories.

機電工程署與政府各部門及市民通力合作，提供機電及氣體應用的規管架構，確保公眾安全。規管服務單位由經驗豐富的專業工程師、督察及技術人員組成，目標是確保公眾安全，並維持高安全水平。我們負責執行各有關安全使用電力、氣體、升降機及自動梯、機動遊戲機、架空纜車及山頂纜車的法例和編印工作守則及指引。我們亦就一系列機電安全的問題，擔任政府的技術顧問，並就有關的法例提供意見。

氣體安全

加強對瓶裝石油氣分銷商的管制

機電工程署出版了《瓶裝石油氣分銷商工作守則》，為業界提供操作指引，並加強品質管制。該守則有助業界按政府的規例，定出有效的管理方法，並制定瓶裝石油氣分銷商的監管制度，其要點如下：

- 將客戶資料庫及紀錄電腦化
- 規定分銷商須成為註冊氣體工程承辦商
- 資源管理
- 不斷培訓員工
- 品質保證
- 定期對分銷商進行稽核

這本工作守則由C1及C2兩個單元組成。單元C1詳述安全操作及管理的方法，已於2001年實施。同時，我們亦已完成全面實施單元C2的預備工作，這個單元載列成為分銷商所需的資格。我們亦透過舉辦簡報會，向分銷商解釋這兩個單元的理念，並介紹其實施詳情。2002年年初，本署與業界代表成立聯絡小組，定期召開會議，討論雙方關注的問題，並監察試行時的情況和進度。我們在2002年10月全面推行單元C2前，更與氣體供應公司合作進行試驗稽核。

我們現正與業界合作，製作一份名為「石油氣分銷商知多一點點」的單張，供市民在選擇分銷商時作參考之用。

紀要事實及統計數字

機電工程署負責執行與煤氣、石油氣及天然氣的進口、生產、儲存、運送、供應及使用有關的氣體安全法例。2001年，我們進行了7,000多次實地視察和巡查了氣體工程承辦商430次，不斷監察氣體工程承辦商的表現。年內，共檢查了673部石油氣缸車及石油氣瓶車，並收到510宗氣體事故報告，有關事故報告的數目自1997年起便不斷下降。

Protecting Public Safety

At EMSD, we work closely with other government agencies and the community to provide a regulatory framework that will ensure public safety in electrical, mechanical and gas applications. With an experienced team of professional engineers, inspectors and technicians, our aim is to achieve and maintain a high standard of public safety. We administer safety legislation and issue codes of practice and guidelines on the safe use of electricity, gas, and lifts and escalators as well as in such diverse areas as amusement rides, aerial ropeways and the Peak Tramway. We also act as a technical advisor to the government on a range of safety issues and provide recommendations on the legislation necessary to ensure public safety.

GAS SAFETY

Strengthening Control Over LPG Cylinder Distributors

EMSD has published the Code of Practice for Cylinder LPG Distributors to provide operational guidance and strengthen quality control within the industry. The code helps to establish effective management methods, as required by government regulations, and to develop a monitoring system for cylinder LPG distributors. Key points of focus are:

- Computerised customer database and records
- Requirement that distributors be registered gas contractors
- Resource management
- Continuous training for employees
- Quality assurance
- Regular audit of distributors

The code of practice consists of two modules, namely C1 and C2. Module C1, which delineates the methodology of safe operation and management,

was implemented in 2001. At the same time, we completed the groundwork to prepare for the full implementation of Module C2, which sets out the qualification requirement for distributors. We also explained to distributors the rationale behind the two modules and provided details of their implementation through various briefing sessions. A liaison group was formed by EMSD and trade representatives in early 2002, and regular meetings were held to discuss issues of concern and to monitor the situation and progress of the trial

implementation. Joint pilot audits had also been conducted prior to the full implementation in October 2002.

We are now preparing, in collaboration with the trade, a leaflet called "Knowing the Distributors". It will serve as a useful reference for members of the public selecting a distributor.



機電工程署出版工作守則，加強業界品質管制。
EMSD publishes codes of practice to strengthen quality control within the industry.

Facts & Figures

EMSD is responsible for the enforcement of gas safety legislation in the importation, manufacture, storage, transport, supply and use of Towngas, LPG and natural gas. In 2001, we conducted more than 7,000 site inspections and made 430 visits to gas contractors as part of an ongoing effort to monitor their performance. A total of 673 LPG road tankers and cylinder wagons were inspected, and 510 gas incidents were reported during the year. The number of incidents has been on a downward trend since 1997.

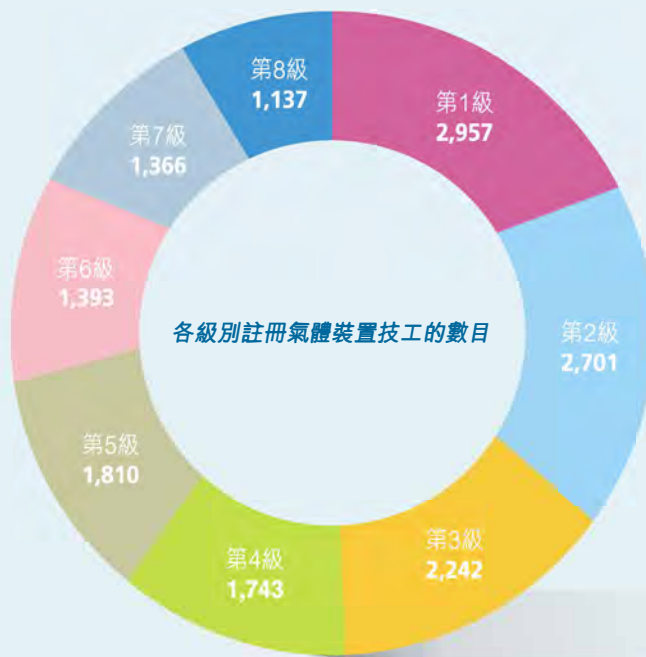
引入「GU標誌」

住宅式氣體用具強制審批計劃將由2003年1月起實施，就這些產品的供應及安裝定出新規例，以確保安全。審批計劃適用於所有新的住宅式氣體用具，包括於計劃實施當日或之後進口或於本地生產以供本港使用的產品。於住宅樓宇內使用的煮食爐、熱水爐、乾衣機以及以小型石油氣瓶作燃料的手提卡式爐，將受有關計劃監管。

所有獲批准的氣體用具均會附上認可標籤，名為「GU標誌」，市民及氣體裝置技工可藉此辨別出哪些才是獲批准的住宅式氣體用具型號。此外，該標誌亦可作為一種品質保證，凡附有標誌的氣體用具不單是按國際認可的安全標準生產，並且亦曾接受本港實驗室的品質保證檢查。在撰寫本文時，已有超過340個型號的產品獲得批准，約佔本地市場產品85%。

註冊氣體裝置技工

截至2001年為止，獲得機電工程署註冊的氣體工程承辦商有385間，而註冊氣體裝置技工則有3,184名，當中大部分人擁有多於一個級別的註冊資格。下圖為各級別註冊的細目。



級別	1	2	3	4	5	6	7	8
數目	2,957	2,701	2,242	1,743	1,810	1,393	1,366	1,137



市民及氣體裝置技工可藉「GU標誌」辨別已獲批准的住宅式氣體用具型號。
The "GU Mark" helps the public and gas installers to identify approved models of domestic gas appliances.



Introducing "GU Mark"

From January 2003, a mandatory approval scheme for domestic gas appliances will come into effect, stipulating new regulations to control safety in the supply and installation of these products. The approval scheme applies to all new domestic gas appliances, whether imported or manufactured locally for use in Hong Kong on or after the effective date.



住宅式氣體用具強制審批計劃由2003年1月起生效，確保安全標準。

From January 2003, a mandatory approval scheme for domestic gas appliances will come into effect to ensure safety standards.

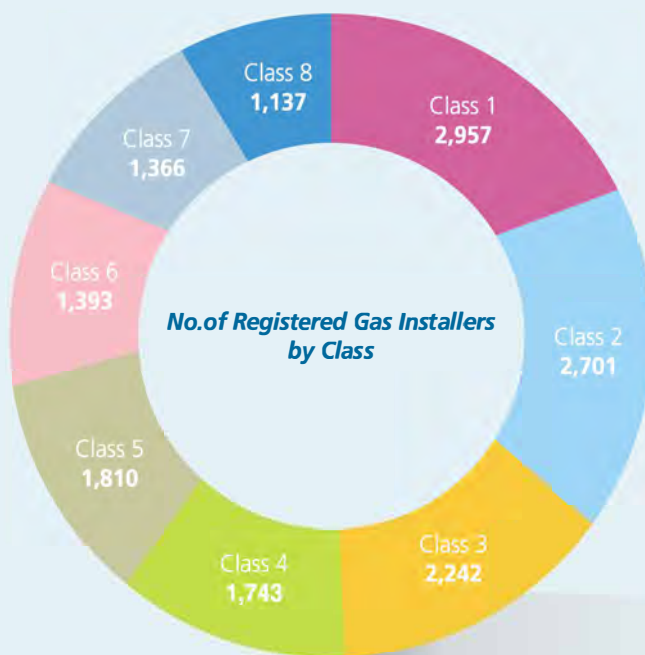
Cookers, water heaters and clothes dryers, as well as portable cassette cookers fuelled by small disposable gas cylinders, which are intended for use inside domestic premises, will be covered under the scheme.

All approved gas appliances will bear an approved mark, known as the "GU Mark". This will help the public and gas installers to identify approved models

of domestic gas appliances and is also an assurance that these appliances have not only been produced in accordance with recognised international safety standards, but also been subjected to quality assurance checks in Hong Kong laboratories. At the time of writing, more than 340 models had been approved, representing about 85 per cent of the local market.

Registered Gas Installers

As of 2001, there were 385 gas contractors and 3,184 gas installers registered with EMSD, most of which hold more than one class of registration. The chart below shows the breakdown by class.



Class	1	2	3	4	5	6	7	8
Number	2,957	2,701	2,242	1,743	1,810	1,393	1,366	1,137



◀ 為住宅樓宇電力裝置進行定期安全測試是機電工程署優先處理的範疇。
Residential buildings are a priority of EMSD's efforts in periodic testing of electrical installations.

▼ 機電工程署透過不同渠道游說業主 / 租戶為大廈電力裝置進行定期檢查。
EMSD makes use of different channels to persuade owners / tenants to conduct periodic inspection of electricity installations in buildings.



電力安全

電力裝置的定期測試

無論是住宅單位、店鋪、辦公室抑或大廈的公用地方，凡核准負荷超過100安培的電力裝置，均須最少每5年進行一次檢查、測試及領取證書，以確保安全。其中，住宅樓宇電力安全一直是機電工程署優先處理的範疇。

全港35,000幢住宅樓宇中，在屋宇署及民政事務總署的協助下，超過96%已接受電力安全檢查和測試。由於部分樓宇的業主 / 租戶並未聘用物業管理公司，亦沒有成立業主立案法團，令這項工作更見艱鉅，我們必須努力堅持，不斷透過磋商和家訪，游說他們採取行動，俾能符合這項規定。



與業界溝通是我們今年的重點工作之一。
Trade communications was an area of our focus this year.

與內地部門加強合作

機電工程署一直與內地部門聯繫，並就電氣產品的安全標準事宜加強合作，此舉有助確保電氣產品符合我們的標準。鑑於由內地進口的電氣產品數量龐大，雙方表誠合作是十分重要的。

我們亦作出特別安排，雙方互相提供訓練及互訪。更重要的是可以加快追查問題的產品的來源，俾能及時採取適當的行動，防止問題惡化。



機電工程署與內地部門就電氣產品的安全標準事宜加強合作。
EMSD has fostered closer cooperation with Mainland authorities in the safety standards of electrical products.

執法工作

為了確保電力安全，機電工程署不斷努力，定期巡查全港各區的固定電力裝置及出售電氣產品的商鋪。在2001年，我們就41宗涉及電氣產品安全的個案提出檢控，而因違反5年定期檢查和測試規定而被檢控的固定電力裝置擁有人，則有322名。

ELECTRICAL SAFETY

Periodic Testing of Electrical Installations

Whether in residential apartments, shops or offices, or in communal areas of buildings, electrical installations with an approved loading exceeding 100 amperes should be inspected, tested and certified at least once every five years to ensure safety. Residential buildings have always been a priority of EMSD's efforts over the years.

More than 96 per cent of all 35,000 residential buildings in Hong Kong have been inspected and tested for electrical safety, with the kind support of the Buildings Department and Home Affairs Department. As owners/tenants of some of these buildings have not appointed a property management company nor formed an incorporated owners

association, patience, determination and numerous negotiations and home visits were necessary to persuade them to take compliance actions.

Closer Cooperation with Mainland Authorities

EMSD has been working with its mainland counterpart to foster closer cooperation in the safety standards of electrical products. This initiative helps to safeguard our required standards and is of particular significance considering the volume of imports from Mainland China.

Special arrangements have been made to facilitate reciprocal training and exchange visits, and more important, to allow for faster checking of the source of any problematic product. Appropriate and timely action can then be made to prevent the problem from worsening.



電力快訊是我們與業界定期溝通的渠道之一。
Electricity News was launched to establish a regular communications channel with the trade.

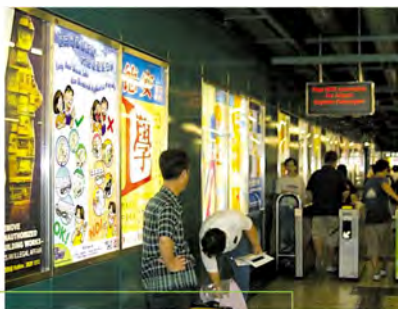
Enforcement Work

To ensure safety, EMSD has continued its effort to conduct regular inspections at various outlets of electrical products and fixed electrical installations throughout the territory. In 2001, we have initiated 41 prosecution cases in relation to electrical product safety while 322 owners of fixed electrical installations who violated the five-year periodic inspection and testing requirements were prosecuted.



為家庭用戶設計各式各樣的宣傳刊物，提高市民對電氣產品安全的意識。
Various kinds of publicity materials have been prepared to promote electrical safety for households.





在地鐵車站進行宣傳，有助提高市民對電氣產品安全的意識。
Advertising in MTR stations helps to heighten public awareness of the issue of electrical product safety.

業界溝通、教育和合作

今年，機電工程署將與業界溝通定為重點工作之一，因為我們相信，單靠法規並不足以令有關人士遵守安全標準。

儘管本署已制定新條文，為電氣產品定出安全標準，但我們仍須不斷努力，確保這些標準得以遵行。為了加深業界對安全標準的了解及爭取他們的支持，我們不但定期為進口商、代理商、分銷商、批發商和零售商舉辦座談會和講座，還進行了多次店鋪巡查。

我們最近出版了一份電力快訊，作為與業內人士定期溝通的渠道，讓他們溫故知新，認識有關的最新科技知識、標準及規例。我們將派發這份通訊予本港所有註冊電業工程人員。

我們深信這些措施有助提高安全標準，最終令普羅市民受惠。

紀要及統計數字

機電工程署負責制定及管理合資格電業工程人員及電業承辦商登記冊，並根據《電力條例》規定的安全標準監察他們的表現。只有已獲得機電工程署註冊的電業工程人員及電業承辦商，才可進行固定電力裝置的電力工程。註冊證書必須每3年續期一次。2001年是證書續期的高峰期：我們共處理了超過26,000宗續期申請，是2000年的9倍。

實地視察對確保固定電力裝置安全至為重要。在2001年，我們共進行超過9,600次實地視察，並為6,868張測試證書加簽。

公眾教育

除了與業界溝通外，本署亦舉辦連串教育活動，以提高市民對電氣產品安全的意識，包括利用戶外廣告牌及在地鐵和九鐵車站進行宣傳。

此外，我們又為家庭用戶編訂新的電力安全指引。有關指引剛剛出版，現於各區民政事務處免費派發。

將數據庫及資料系統升級

為了響應公共服務電子化計劃，加快電子政府計劃在本港推行的步伐，我們提升了部門的資訊系統和數據庫，方便市民透過互聯網提交電子表格，令使用者和業內人士可享受更靈活的服務。數據庫升級後，擷取和查閱資料的速度會更快，從而加快整個工作流程，改善部門日常運作的效率。



九鐵車站是我們宣傳渠道之一。
KCRC stations are among the communications channels of our publicity work.

Trade Communication, Education and Cooperation

EMSD has made trade communications an area of focus this year, since we believe that regulation alone is insufficient to ensure full compliance with safety standards.

While EMSD has introduced new provisions mandating safety standards for electrical products, for instance, there is still much to be done to ensure these standards are met. To enhance understanding and garner support from the trade, we have regularly organised seminars and talks for importers, agents, distributors, wholesalers and retailers, not to mention numerous shop visits.

We recently launched a newsletter *Electricity News* to establish a regular

communications channel with people in the trade. It serves to refresh their knowledge and provides an update of relevant technologies, standards and regulations. *Electricity News* is distributed to all registered electrical workers in Hong Kong.

We believe that the ultimate beneficiaries of all these initiatives will be members of the public as a higher safety standard is upheld.

Public Education

Alongside trade communications, EMSD has also initiated a series of educational programmes to heighten public awareness of the issue of electrical product safety. These included advertising on outdoor billboards, and in MTR and KCR stations.

Another initiative is a new guidebook on electrical safety designed for households. It has just been published and is now available for free distribution at District Offices.

Databases and Information Systems Upgraded

In support of the ESD programme to enhance e-government in Hong Kong, we have upgraded our information systems and databases. This facilitates electronic form submission via the Internet and offers greater flexibility to users and relevant parties in the trade. The database upgrade allows quicker access and retrieval of data, thereby speeding up the entire workflow and improving the efficiency of the day-to-day operation of the department.

Facts & Figures

EMSD maintains and administers registers of qualified electrical workers and contractors, and monitors their performance in line with safety standards as required by the Electricity Ordinance. Only those who have registered with EMSD are allowed to carry out electrical work on fixed electrical installations. Moreover, the certificate of registration must be renewed every three years. Renewal registration reached its peak in 2001 when we processed over 26,000 applications, 9 times that for 2000.

Site inspections are key to ensuring the safety of fixed electrical installations. In 2001, more than 9,600 inspections were conducted and 6,868 testing certificates were endorsed.



合資格的電業工程人員及電業承辦商可獲發註冊證明書。

Certificates of Registration issued to qualified electrical workers and contractors.



▲ 本港今年舉辦了多個大型嘉年華會，所設置的臨時機動遊戲機超過50款。

Several large-scale carnivals featuring more than 50 temporary amusement rides took place in Hong Kong this year.

◀ 機電工程署負責監察全港逾42,000部升降機及5,400部自動梯的安裝、操作和維修。

EMSD monitors the installation, operation and maintenance of over 42,000 lifts and 5,400 escalators throughout the territory.

機械安全

機動遊戲機

年內，本港舉辦了多個大型嘉年華會，所設置的臨時機動遊戲機超過50款。由於要在短時間內處理這些申請，這對機電工程署的資源分配造成相當壓力。而我們在靈活調配資源下，仍能夠在緊絀的時間內審批這些申請內的技術文件，並實地進行安全檢查。我們的努力和專業精神，不但贏得主辦機構的肯定和讚賞，亦能確保這些遊戲機符合安全標準，使市民可以安心使用。期內並未發生任何因機動遊戲機機械故障而造成的受傷事故。

香港迪士尼主題公園工程

香港迪士尼主題公園工程的準備工作現正進行得如火如荼。機電工程署已就有關工程成立了一個專責隊伍，並以技術顧問的身份參與多個工作小組，除了審批園內機動遊戲機等重要設施的設計外，亦負責協助及監管竹篙灣基建工程的進行。

東涌纜車工程

東涌纜車工程已交由地鐵公司負責。身為技術評估委員會的成員，機電工程署一直就技術和安全問題提供意見，當中包括拯救計劃和環保問題。我們已舉行初步會議，為纜車計劃的設計進行審批。

此外，我們亦正更新有關的工作守則，以配合架空纜車設計及安裝的最新發展。

升降機擁有人指引

我們現正為升降機擁有人擬備一本新的指引，解答關於維修保養和規管要求方面的問題。指引內載有實用貼士、守則及有關升降機的常見問題。

業界溝通及教育

為了鼓勵電梯業從業員不斷學習新技術，並溫故知新，機電工程署與電梯業協會、勞工處及職業安全及健康局合作，於2003年年初為升降機及自動梯工人舉辦一個問答比賽。

空調電車試行

為了改善服務，香港電車有限公司將4部電車外殼由木製改為鋁製。其中一部鋁製電車已裝上空調設備，並進行試行。機電工程署在審批技術文件時一直提供協助，並強調有關安全事宜。

紀要及統計數字

為保障公眾安全，機電工程署負責監察全港逾42,000部升降機及5,400部自動梯、機動遊戲機、建築工地升降機及塔式工作平台的安裝、操作和維修。在2001年，我們共進行了超過7,000次巡查，並處理了超過52,000份定期測試證明書。

至於本港升降機及自動梯工程承建商及服務提供者的註冊方面，現時已有48間升降機工程承建商獲得本署註冊，當中36間亦同時是註冊自動梯工程承建商。

MECHANICAL SAFETY

Amusement Rides

Several large-scale carnivals - featuring more than 50 temporary amusement rides - took place in Hong Kong during the year, bringing considerable challenges to EMSD. To process the relevant applications at short notice, we mobilised and redeployed our resources in order to review technical submissions and perform safety inspections on site on a very tight schedule. Our commitment and professionalism not only won the recognition and appreciation of carnival organisers, but also ensured that safety standards were adhered to while members of the general public were enjoying the rides. No incidents of mechanical failure causing personal injury were reported on these rides.

Disney Theme Park Project

EMSD has formed a dedicated team to work on the Disney Theme Park Project, for which preparatory work is proceeding at full pace. As the technical advisor sitting on several of the working groups, EMSD is responsible for facilitating and monitoring the infrastructural work in Penny's Bay, in addition to reviewing the design of the amusement rides which will form the core facilities of the theme park.



升降機及扶手電梯安全運動的標語創作比賽，共收到的作品逾1,600件。
Over 1,600 entries were received for a safety slogan competition in support of the Lift and Escalator Safety Campaign.



Tung Chung Cable Car Project

The Tung Chung Cable Car Project has been awarded to the MTR Corporation. As a member of the Technical Assessment Panel, EMSD continued to play an advisory role on technical and safety issues, including rescue operations and environmental matters. Preliminary meetings have been held to review the design of the project.

On another note, the code of practice is now being updated to keep pace with recent developments in the design and installation of aerial ropeways.

Lift Owner's Guidebook

A new guidebook is being prepared to help lift owners on such issues as repair and maintenance, and regulatory requirements. It features practical tips, dos and don'ts, and frequently asked questions, as well as common problems facing the lift owner.

Trade Communications and Education

In an effort to encourage continuous learning and to refresh technical skills, EMSD joined forces with the Lift and Escalator Contractors Association, the Labour Department and the Occupational Safety and Health Council to organise a quiz among lift and escalator workers in early 2003.

Air-con Tramcar on Trial

In a bid to improve its service, Hong Kong Tramway Ltd has converted four of its tramcars from wooden to aluminium frames. One of these aluminium tramcars has now been retrofitted with air-conditioning for a trial run. EMSD helped in reviewing its technical submissions with a focus on safety issues.



塔式工作平台是機電工程署負責規管的機械裝置之一。
Tower working platforms are among the various mechanical installations under EMSD's regulation.

Facts & Figures

In ensuring public safety, EMSD monitors the installation, operation and maintenance of over 42,000 lifts and 5,400 escalators, as well as amusement rides, builders' lifts and tower working platforms throughout Hong Kong. In 2001, we conducted more than 7,000 inspections, and processed more than 52,000 periodic test certificates.

As to the registration of contractors and service providers in Hong Kong, there are currently 48 lift contractors registered with EMSD, 36 of which are also registered as contractors for escalators as well.

提高公眾安全及節能意識

RAISING PUBLIC AWARENESS

機電工程署透過連串社區外展活動及傳媒宣傳，將機電安全的訊息傳達給各行各業及各年齡組別的市民大眾。

EMSD has used a mix of community outreach activities and mass media advertising to convey safety messages to people of different age groups and from different walks of life.



我們安排免費諮詢服務，由專業工程師走訪各區，解答市民有關機電安全的問題。

Professional engineers travelled around the territory to answer public enquiries on safety issues in a consultation roadshow.



提高公眾安全 及節能意識



機電工程署署長在「機電安全嘉年華」致辭。
The Director of Electrical and Mechanical Services
speaks at the E&M Safety Carnival.

機電工程署其中一項主要任務是保障市民免受電力、機械及氣體意外或事故的傷害。我們負責執行安全法例，並且推行各種安全標準和守則。此外，我們亦積極推廣能源效益。公眾教育是我們工作的重要環節，我們致力提高公眾對有關問題的認識，並鼓勵市民遵從安全守則。我們透過多種渠道將安全訊息帶給公眾，包括出版刊物、進行推廣及宣傳運動、派發海報及郵件，舉行嘉年華會、巡迴展覽、遊戲、比賽及問答遊戲，以及舉辦安全講座和研討會等。

「機電安全香港通2002」

今年，機電工程署再次舉辦大型機電安全運動。這次運動由機電工程署與18個機構合力舉辦。政府和業界主要機構攜手合作，致力提高市民對機電安全和能源效益的意識，並且推廣正確使用電氣產品、氣體用具和升降機及自動梯。

這項運動透過電視、電台和報章，以輕鬆、創新的手法向市民傳遞安全訊息，包括在電視播出綜藝節目、在電台播放一分鐘短劇，以及在報章以漫畫廣告形式進行宣傳。

我們在11月舉行了一個戶外嘉年華會，有數千名來自不同階層的市民參加。每個合辦機構均自設富教育性的遊戲攤位，並向市民派發宣傳單張。

此外，我們亦進行全港性的家訪，為住戶提供免費電力安全檢查和進行能源效益測試；並舉辦安全標語比賽，收到的作品逾1,600件。我們又與香港電台在一個大型購物商場合辦嘉年華會；並安排免費機電安全諮詢服務，由我們的專業工程師到全港各區與市民會面，解答生活上有關機電安全的問題。

參與這項運動的主要機構和行業商會來自公用事業、公共交通、屋宇物業管理和機電界，包括香港機場管理局、香港加德士有限公司、華潤石化（集團）有限公司、中華電力有限公司、

消費者委員會、埃克森美孚香港有限公司、東方石油有限公司、香港中華煤氣有限公司、香港物業管理公司協會、香港電燈有限公司、香港房屋委員會、港九電器商聯會、香港液體氣（集團）有限公司、九廣鐵路公司、電梯業協會、地鐵公司、香港蜆殼有限公司和聯邦爐具（集團）有限公司。



綜藝電視節目為今年宣傳活動之一。
Variety show on television formed part of the
media programme of the Campaign.

Raising Public Awareness

A key role of EMSD is keeping the public safe from electrical, mechanical and gas accidents or incidents. We implement and enforce safety legislation and have introduced a wide range of safety standards and practices. We are also actively involved in promoting energy efficiency. Public education is an important aspect of our activities as we work to foster awareness of the issues involved and to reinforce safety practices within the community. We take this message to the community through a number of different channels, including publications, promotional and advertising campaigns, posters and mail-outs, carnivals and road shows, games, contests and quizzes, and safety talks and seminars.

E&M SAFETY CAMPAIGN 2002

This year, EMSD outdid itself once again in an E&M safety campaign that was the largest of its kind in Hong Kong. In collaboration with 18 co-organisers, EMSD led a collective effort that not only created synergy from the cooperation between government and key industry players, but also successfully enhanced the community's awareness of safety and energy efficiency, and promoted good practices in the use of electrical products, gas appliances, and lifts and escalators.

The campaign featured an innovative media programme utilising television, radio and print as communications channels. It included a variety show on television, one-minute drama episodes on radio, and comic advertisements in newspapers, all designed to communicate safety messages to members of the public in a light-hearted fashion.

The campaign also featured an outdoor carnival in November, attracting thousands of people from different



「機電安全嘉年華」吸引數千名來自不同階層的市民參加。
The E&M Safety Carnival has attracted thousands of people from all walks of life.



walks of life for a day of fun. Each of the co-organisers set up their own educational game booth and distributed informative pamphlets.

The campaign also included a territory-wide home-visit service, offering households a free electrical safety check and conducting an energy efficiency survey; a safety slogan competition for which over 1,600 entries were received; a carnival organised in conjunction with RTHK at a major shopping mall; and a consultation week whereby professional engineers travelled around the territory to meet with members of the public, answering enquiries related to safety issues concerning people's livelihood.

Partners joining in this initiative are leading organisations and trade associations from the utilities, public transport, housing and estate management sectors, and the electrical and mechanical field. They are: the Airport Authority Hong Kong, Caltex Oil Hong Kong Limited, China Resources Petrochemicals (Group) Company Limited, CLP Power Hong Kong Limited, the Consumer Council, ExxonMobil Hong Kong Limited, Feoso Oil Limited, the Hong Kong and China Gas Company Limited, Hong Kong Association of Property Management Companies, the Hongkong Electric Co., Ltd., Hong Kong



以家傳戶曉的卡通人物「麥嘜」為主角宣揚安全訊息。
Cartoon celebrity McMug has been appointed as an icon character to promote safety messages.

幼稚園外展活動

我們特別為幼稚園學生舉辦一項外展宣傳活動，委派了兩名青年大使，以講故事、遊戲及示範等方式，向小朋友傳遞安全使用機動遊戲機、升降機及自動梯的訊息。由於反應熱烈，我們在9個月內共走訪超過250間幼稚園，向35,000名學生進行宣傳。

家傳戶曉的卡通人物

今年，我們推陳出新，以家傳戶曉的卡通人物「麥嘜」¹為主角，宣揚安全訊息。我們製作了大量印有「麥嘜」的海報和標貼，派發給機動遊戲機、升降機及自動梯的擁有人及營運商。

安全講座、研討會及展覽

在多個業界團體及民政事務總署的支援下，我們於年內繼續為業界和社區團體舉辦連串安全講座及研討會。我們在一些大商場舉行巡迴展覽，利用展板和互動電腦遊戲，教導市民如何安全使用家庭電器及氣體用具，以及正確使用升降機和自動梯的方法。



以輕鬆漫畫向市民傳遞安全訊息。
Comics are used to communicate safety messages in a light-hearted fashion.



外展宣傳是我們公眾教育活動的重要環節，務求將安全訊息傳遞至不同年齡的市民大眾。
Outreach programmes are key to our public education efforts in reaching people of different ages.



Housing Authority, Hong Kong & Kowloon Electrical Appliances Merchants Association, Hong Kong L.P. Gas (Holdings) Limited, the Kowloon-Canton Railway Corporation, the Lift and Escalator Contractors Association, the MTR Corporation, Shell Hong Kong Limited, and the Union Gas Appliances (Holdings) Limited.

OUTREACH PROGRAMME TO KINDERGARTENS

We have developed an outreach programme especially for kindergarten students. Two young ambassadors were appointed to lead the programme, conveying messages about the safe use of amusement rides, lifts and escalators to children in a lively fashion through story telling, games and demonstrations. The initial response to the programme was so overwhelming that it was extended to cover more than 250 kindergartens and reach 35,000 pupils over a nine-month period.

CARTOON CELEBRITY

Another innovative initiative we undertook this year to promote safety messages was the appointment of cartoon celebrity McMug¹ as an icon character for publicity purposes. A series of posters and stickers featuring the popular character have been published and distributed to owners and operators of amusement rides, lifts and escalators.

SAFETY TALKS, SEMINARS AND EXHIBITIONS

We continued with a series of safety talks and seminars for trade and community organisations this year - with the support of various trade associations and the Home Affairs Department. Roving exhibitions were organised at popular shopping malls, featuring display panels and interactive computer games designed to demonstrate the safe use of household electrical and gas appliances, and the proper way to use lifts and escalators.

1 註：機電工程署獲版權擁有人授權使用「麥嘜」。

1 Note: EMSD has obtained authorisation from the copyright owner of McMug to use the cartoon character.

能源效益為社群

ENERGY EFFICIENCY
FOR THE COMMUNITY



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