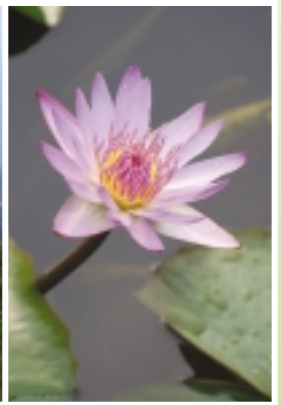




渠務署

Drainage Services Department



ENVIRONMENTAL REPORT 2006

Foreword



Blue sky, clear harbour and green rivers are the environmental targets of Hong Kong. DSD plays a vital role in achieving these targets. Our staff are fully aware of the impact of our works on the environment, and are committed to contribute to the overall environmental improvement for the community.

On sewage treatment, we introduced tertiary wastewater treatment in Ngong Ping to reduce the discharge of pollutants into the nearby stream, and at the same time to test out the practicality of adopting effluent reuse in Hong Kong. To further improve the water quality in the Victoria Harbour, we investigated the alternatives for disinfecting the effluent from the Stonecutters Island Sewage Treatment Works and pushed ahead the Harbour Area Treatment Scheme Stage 2A.

On flood prevention to save life and reduce damage of property, we continue our massive river channel projects in the New Territories. We also pay attention to the flooding problem in the low-lying area in Wing Lok Street, Sheung Wan. In addition to coming up with ecological design for the drainage channels, we have started examining the

feasibility of restoration works along the Yuen Long nullah. This approach brings us in line with the latest practice on stormwater management in many developed countries.

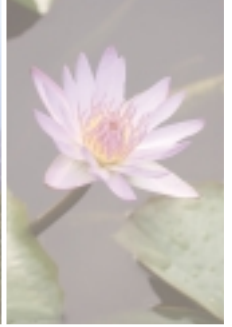
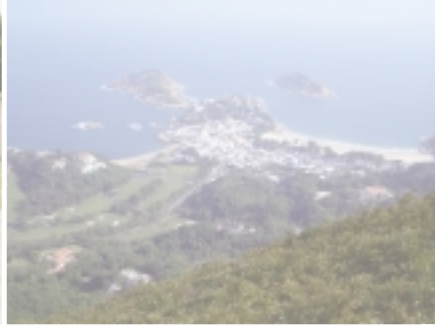
We are mindful that good engineering works to improve the environment need to consume less energy and fewer chemicals. Therefore, we decided to set up the ISO 14001 environmental management system to help us minimize the impact of our activities on the environment. The preparation works are progressing satisfactorily, and we plan to complete the certification process by the end of 2007.

Our stakeholders provide a lot of useful inputs to our works and we look forward to continuing our great partnership with them. We opened two information centres in 2006, one at the Stonecutters Island Sewage Treatment Works and the other at Ngong Ping Sewage Treatment Works. They provide additional venues for our next generation to learn about the works to improve our environment outside the classroom.

Last but not least, I welcome your feedback on this report and any comments on our works. I sincerely believe that we should all work together for a sustainable environment. Comments and enquiries may be sent to enquiry@dsd.gov.hk

CK Wong, JP

Director of Drainage Services



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Vision, Mission & Values

Our Vision

- To develop and maintain world-class drainage and sewerage systems, and sewage treatment and disposal facilities to keep our community healthy and safe

Our Mission

- Improving our drainage and sewerage systems to treat sewage and dispose of rainwater in an environmentally responsible manner
- Delivering efficient, cost-effective and courteous services to the public
 - Fostering good working relationships with our clients, consultants and contractors
 - Providing a safe, healthy and rewarding working environment for our staff



Our Values

- Commitment
- Customer Satisfaction
- Professionalism
- Teamwork



Environmental Policy & Goals

Environmental Policy

We are committed to being environmentally conscious in all our activities and services and endeavour to serve the Hong Kong community with the best of our expertise in safeguarding human health, protecting and preserving natural ecosystems, thus contributing to the sustainable development of Hong Kong.

We aim to continually improve the quality of our services, and to alleviate as far as practicable the impact that our facilities and sewage and drainage systems impose on the environment of Hong Kong. To meet these objectives, we are committed to:

- Adopting state-of-the-art clean technologies and pollution prevention measures;
- Integrating sustainability considerations into the design, construction and operation of our facilities;
- Minimising and mitigating environmental impacts arising from the construction and operation of our facilities;
- Meeting all statutory and regulatory requirements on environmental performance that are applicable to the activities of the department; and
- Devising and conducting internal operations in an environmentally responsible manner.

We ensure that our Environmental Policy is communicated to all staff, our consultants and contractors, and is open to public scrutiny. Our staff are committed to upholding this departmental policy, obtaining the relevant training and deploying the necessary resources to enable its implementation.

Environmental Goals

Our environmental goals are:

- To provide and operate world-class sewerage/drainage systems and sewage treatment/disposal facilities to fulfil the growing needs of the local community and contribute to the sustainable development of Hong Kong.
- To implement sewerage and sewage treatment/disposal programmes in a professional manner; in partnership with other Government establishments including the Environmental Protection Department, and to meet the Water Quality Objectives for Hong Kong waters.
- To implement drainage and flood protection programmes in a professional manner to minimise flooding and to provide protection to local inhabitants, properties and the environment.
- To apply the principles of Reduce, Reuse, Recycle and Recover in the consumption of materials and management of wastes and seek continuous improvement in the efficient use of natural resources and energy in all our operations.



Responsibilities

DSD is responsible for flood prevention, and collection and treatment of sewage in Hong Kong. On flood prevention, our works include the planning, implementation, and operation of drainage in urban area, and river channel management in the new territories. On sewage collection and treatment, we implement and operate sewerage and sewage treatment plants planned by the Environmental Protection Department.

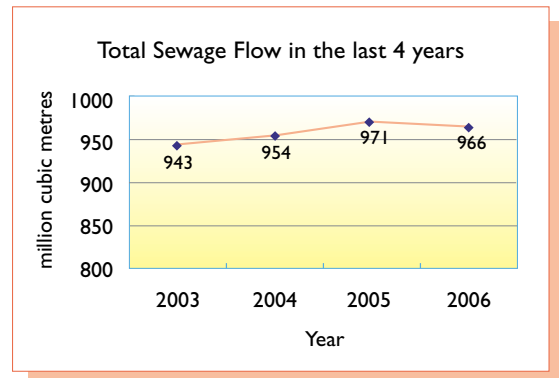
Sewage Collection and Treatment

DSD collected and treated 966 million cubic metres of sewage in 2006, which was at the same level of the last year.

The facilities for handling the sewage include 70 sewage treatment works (STW), 210 sewage

pumping stations, 43 submarine outfalls, 3 effluent disposal tunnels, and 1,523 kilometres of sewers.

A tertiary sewage treatment plant at Ngong Ping was opened in early 2006. The plant treats sewage from the tourists and the nearby residents to a high level suitable for non-potable reuse, such as toilet flushing, irrigation and rearing of aquarium fish.



The tertiary sewage treatment plant in Ngong Ping with reclaimed water facilities

Flood Prevention

Flooding is a serious concern in the low-lying areas of the northern New Territories and the old urban areas such as Western District. DSD has a massive flood prevention programme underway to train rivers, provide village pumping schemes and undertake urban drainage improvement works. In 2006, we introduced a "flood watch" scheme as one of the stop-gap measures to address the flooding problem in the Wing Lok Street area in Sheung Wan. Under the scheme, a "flood watch" message would be sent to the registered residents and shopkeepers in Sheung Wan low-lying areas to alert them of the possible flood incident. To ensure that stormwater is discharged properly, we carried out maintenance works on 2,508 km of drainage channels and stormwater drains, and 27 flood pumping schemes in 2006.

渠務署於10時41分發出上環水浸短訊，由於暴雨及大潮關係，上環一帶低窪地區，可能受到水浸威脅，請從速完成預防水浸措施。

Flood watch message sent via mobile phone



Flooding in Des Voeux Road West, Sheung Wan on 24 June 2005



A 1500 mm diameter concrete drain pipe was being laid along Queen's road central to address the flooding problem in Sheung Wan



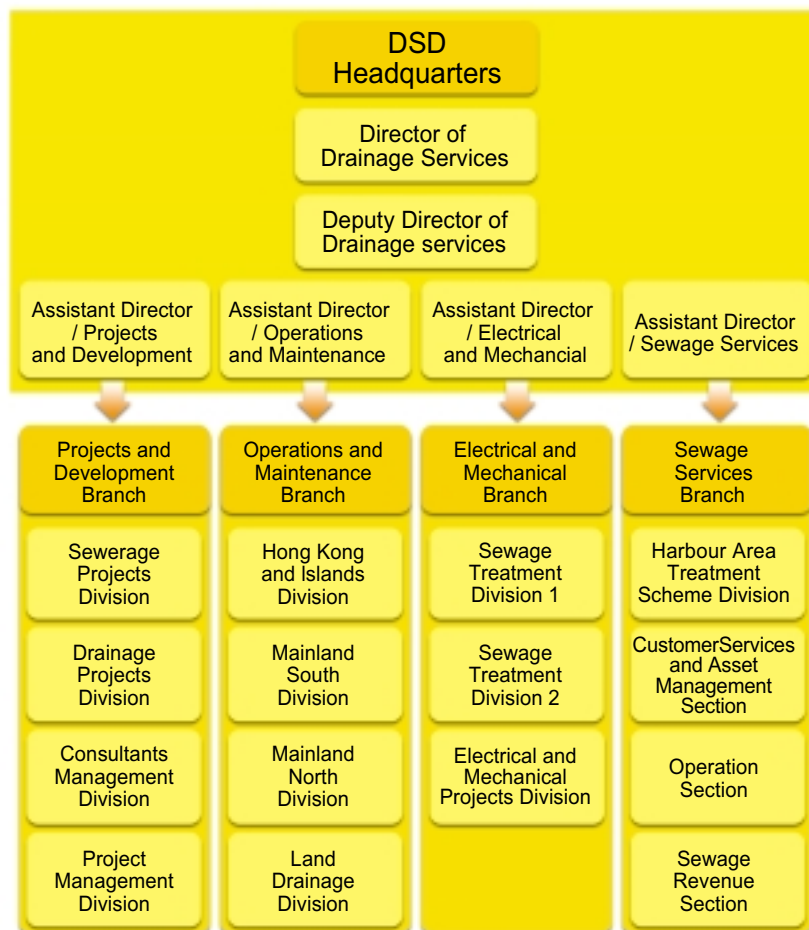
Environmental Management Profile

DSD employs approximately 2,000 staff, of whom about 300 are professional staff, 1,100 are technical and general staff, and 600 frontline staff and direct labours. The department is divided into four branches - Projects and Development, Operations and Maintenance, Electrical and Mechanical, and Sewage Services. Each branch is headed by an Assistant Director. In financial year 2006-07, we undertook 169 projects and 55 contracts with a total project and contract sum of \$50,500M.

A Green Management Committee chaired by the Deputy Director of Drainage Services formulates and reviews environmental policies and guidelines; it also monitors the performance on environmental objectives and targets, and introduces measures to

raise staff awareness and involvement in environmental issues.

There were twelve Green Action Teams that implemented the environmental policies of the Green Management Committee. They also monitored the effectiveness of the green measures by conducting quarterly surveys on resource consumption in offices, and provided feedback for improvement. In order to further improve our performance on environment, DSD decided to adopt an Environmental Management System (EMS) in accordance with the ISO 14001 standard in mid 2006. It is anticipated that the certification process for the EMS would be completed by the end of 2007.



Environmental Performance

We are mindful that our work has a great impact on the environment. Flood prevention saves life and prevents property damages and therefore conserves resources. Sewage collection and treatment prevent pollution of our receiving waters. The construction and operation of the drainage and sewage infrastructures have environmental impact that needs to be mitigated through better planning, design, monitoring and control.

This report presents the following major areas of works relating to our environmental performance.

- Achievement in Sewage Treatment
- Conservation of Resources
- Ecological Enhancement
- Environmental Compliance and Monitoring
- Odour Control
- Green Office
- Staff Training

Achievement in Sewage Treatment

We operate 70 sewage treatment works located throughout Hong Kong (details are shown

in our website, www.dsd.gov.hk). The treatment level depends primarily on where the works are located, as different water bodies in Hong Kong have different waste assimilation capacities. The key pollutants removed from the sewage are organic materials measured as biochemical oxygen demand (BOD), and suspended solids (SS). Sometimes, nutrients for aquatic plant such as nitrogen are removed to prevent eutrophication. All discharges from our sewage treatment works are licensed under the Water Pollution Control Ordinance.

Treatment Level

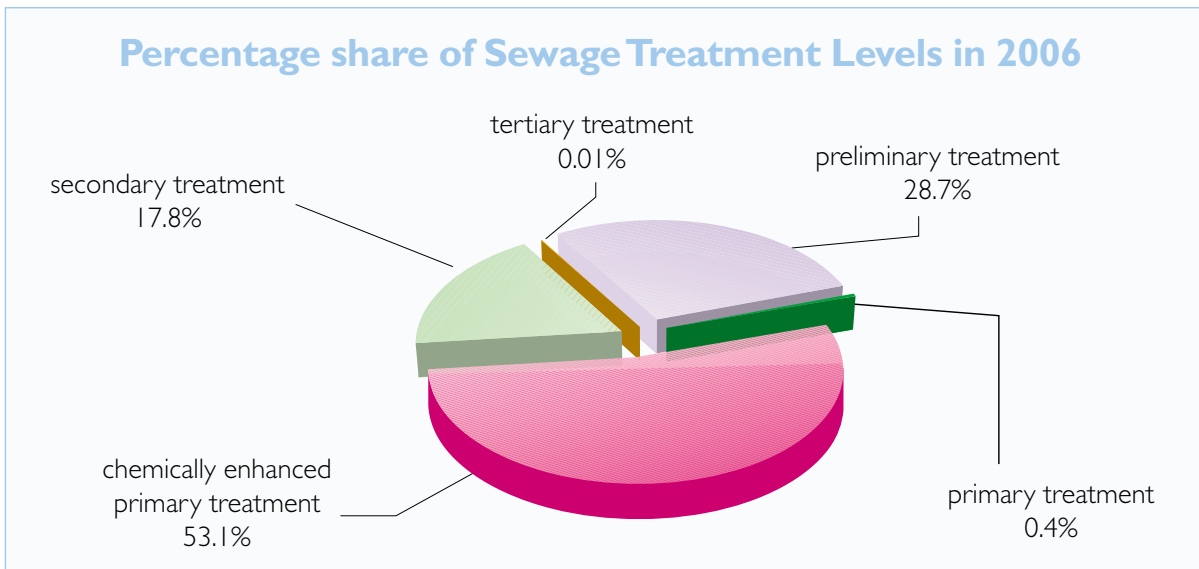
In 2006, we introduced tertiary sewage treatment into Hong Kong to facilitate water reuse. We also considered the alternatives for disinfection of the effluent from the Stonecutters Island Sewage Treatment Works to further improve the quality of the receiving waters. Similar to year 2005, 30% of sewage receives preliminary or primary treatment, 53% receives chemically enhanced primary treatment, and 17% receives secondary treatment. Only 0.01% of sewage receives tertiary treatment.

Levels of Sewage Treatment 2003-06

	Preliminary treatment (million m ³)	Primary treatment (million m ³)	Chemically enhanced primary treatment (million m ³)	Secondary treatment (million m ³)	Tertiary treatment (million m ³)	Total (million m ³)
2003	275	4	508	156	—	943
2004	284	4	507	159	—	954
2005	285	4	515	167	—	971
2006	277	4	513	172	0.076	966

Environmental Performance

Percentage share of Sewage Treatment Levels in 2006



Removal of Pollutants and Sludge Production

The amount of pollutants removed fluctuates according to the characteristics of the incoming sewage and the performance of individual plant. In 2006, we achieved a high percentage of BOD removal due to the commissioning of the stage III of Shatin STW.

The pollutants we removed from sewage produced 820 tonnes of sludge per day, or about 300,000 tonnes for the year. The sludge is dewatered to reduce its volume before it is sent to landfills for disposal. This saves landfill space and helps extend the life-span of our landfills. Other than sludge, screenings and grit are also removed from sewage treatment.

Removal of Pollutants in Sewage Treatment 2003-06

	Biochemical oxygen demand (BOD) removed <i>(for CEPT & secondary treatment)</i>		Suspended solids removed <i>(for CEPT & secondary treatment)</i>		Total nitrogen removed <i>(for secondary treatment)</i>	
	Quantity (tonnes)	Removal Effectiveness	Quantity (tonnes)	Removal Effectiveness	Quantity (tonnes)	Removal Effectiveness
2003	93,654	75.4%	129,563	83.2%	3,770	63.8%
2004	87,910	75.5%	121,003	84.8%	4,889	75.6%
2005	96,761	74.5%	133,131	86.2%	4,734	73.3%
2006	103,093	80.6%	136,246	87.1%	4,706	74.2%

Solid Waste Removed from Sewage 2003-06

	Screenings (cubic metres)	Grit (cubic metres)	Dewatered sludge (tonnes)
2003	20,705	7,078	305,660
2004	19,220	6,738	288,757
2005	18,136	6,557	304,867
2006	18,757	6,289	299,580

Conservation of Resources

There is a growing community demand for better treatment of sewage, odour control, and flood prevention. More energy and chemical input are needed to meet such demand. Therefore, DSD needs to strike a balance between the community demand and the conservation of resources. We always aim to use the resources more effectively and efficiently.

Energy

Conservation of energy is a key environmental target in DSD as our operations are energy intensive. However, the commissioning of new facilities at remote location, the improvement on the quality of the effluent, and the increasing demand to reduce odour from our facilities require additional energy input.

In 2006 we continued our effort to implement various initiatives to save energy, including the adjustment of the operating mode and hours of the plant equipment, the increasing use of biogas and renewable energy, and the replacement of old

equipment by more energy efficient new equipment. With these efforts, the total energy saving was 2.5M kWh. Details of these initiatives are shown in Table I.

In order to make the best use of biogas, which is a by-product from the anaerobic digestion of sludge, we installed a 330kW biogas Combined Heat and Power generator at Shek Wu Hui STW in early 2006. The generator supplies electricity for the facilities within the sewage treatment works and provides the necessary heat for the sludge digestion tanks. This installation helped us save one million kWh of electricity in 2006.



Combined Heat and Power Generator at Shek Wu Hui Sewage Treatment Works

Environmental Performance

Energy Consumption 2003-06

	Total electricity consumed (million kWh)	Electricity consumed in kWh per cubic metre of treated sewage	Diesel fuel consumed for driving dual fuel engines (m ³)
2003	231.0	0.245	2,478
2004	210.7	0.221	2,559
2005	221.7	0.228	2,436
2006	236.2	0.244	2,403

Table I Major Energy Saving Initiatives in Sewage Treatment Facilities

Energy Saving Initiatives	Amount of Energy Saved
<ul style="list-style-type: none"> Replace two centrifuges for sludge dewatering with higher energy efficiency model at Stonecutters Island Sewage Treatment Works (STW) in January 2006. 	477,500 kWh
<ul style="list-style-type: none"> Modify the lighting control at Shatin STW outlying pumping stations to reduce energy consumption in January 2006. 	87,000 kWh
<ul style="list-style-type: none"> Install combined heat and power generator using biogas to generate electricity in Shek Wu Hui STW in March 2006. 	1,016,200 kWh
<ul style="list-style-type: none"> Replace a screw pump motor with higher energy efficiency model at Kwun Tong Intermediate Sewage Pumping Station in March 2006. 	36,000 kWh
<ul style="list-style-type: none"> Modify the operating mode of screening devices and lighting at Tin Wah Road Sewage Pumping Station to reduce energy consumption in April 2006. 	5,400 kWh
<ul style="list-style-type: none"> Replace four centrifuges for sludge dewatering with higher energy efficiency model in Shatin STW in May 2006. 	851,300 kWh
<ul style="list-style-type: none"> Replace fluorescent lamps with T5 lamps and electronic ballasts at Stage II sludge dewatering house control room and Stage II return activated sludge pump house of Tai Po STW in May 2006. 	3,400 kWh
<ul style="list-style-type: none"> Adjust pumping levels and modify operation mode at Aberdeen Sewage Screening Plant to reduce pumping frequency and power demand in May 2006. 	1,000 kWh
<ul style="list-style-type: none"> Modify the lighting control of Sludge Cake Silo Zone at Stonecutters Island STW to reduce energy consumption in June 2006. 	10,500 kWh
<ul style="list-style-type: none"> Modify the operation mode of ventilation and lighting at Shek Wu Hui STW Blower House to reduce energy consumption in August 2006. 	4,700 kWh
<ul style="list-style-type: none"> Total Energy Saving 	2,493,000 kWh



A new type of centrifuge with energy-saving features at Stonecutters Island Sewage Treatment Works

In response to the Clean Air Charter to improve the air quality in Hong Kong, DSD has established an Energy and Emission Management Team led by a Chief Engineer to implement the initiatives on energy saving and emission reduction.

Chemical Consumption

Chemicals are commonly used in sewage treatment to facilitate the removal of suspended solids and tiny organic particles. They are also used in odour control and sludge dewatering.

Mindful of the escalating demand for chemicals, DSD determines to minimize chemicals consumption in sewage treatment. In 2006 we carried out two chemical audits, one at Shatin STW and the other one at the Stonecutters Island STW. The findings suggest that the polymer dosing for dewatering sludge at the Shatin STW could be reduced by 10% to achieve a saving of about \$0.14M per year.



More efficient aeration system adopted at Shatin Sewage Treatment Works

However, the ferric chloride dosage at the Stonecutters Island STW could not be reduced further without affecting the effluent quality.

Environmental Performance

Consumption of Major Chemicals 2003-06

	For CEPT sewage treatment			For sludge dewatering	
	ferric chloride (tonnes)	alum (tonnes)	polymer (tonnes)	ferric chloride (tonnes)	polymer (tonnes)
2003	13,235	86	72	2,912	682
2004	13,154	209	87	2,799	562
2005	12,197	961	96	3,005	644
2006	12,352	1,441 (1)	62	3,030	654

- (1) The increase in alum consumption was due to the high sewage flow in Sham Tseng STW and high alum dose to maintain the effectiveness of UV disinfection.

Consumption of Major Chemicals for Odour Control 2004-06

	ferric chloride (tonnes)	calcium nitrate (tonnes)	activated carbon (tonnes)
2004	2,168	3,503	172
2005	2,035	5,079	180
2006	2,548 (1)	4,890	232 (2)

- (1) The increase in the consumption of ferric chloride for sulphide control was a result of more sludge digestion tanks being put into service upon the completion of the Shatin STW stage III upgrading works.
- (2) The increase in the consumption of activated carbon was a result of the replacement of the carbon upon the expiry of some of the deodorized units.

Ecological Enhancement

Apart from providing sufficient hydraulic capacity to prevent flooding, drainage channels are now expected to blend in with the environment. DSD has recognized this trend in a global context as well as local demand, and has been practicing ecological design of flood prevention works for a few years.

Up to the end of 2006, we have planted more than 36,000 trees and 685,000 shrubs, and created or restored about 40 hectares of wetland or fish pond in our drainage projects. Furthermore, we keep on greening our sewage treatment works and have started greening our pumping stations.



The Green channel at Ngong Ping



Greening at the Tai Hang Tung pumping station

Environmental Performance

Environmental Compliance and Monitoring

The sewage treatment plants that we operate are all licensed under the Water Pollution Control Ordinance. In 2006 the number of non-compliances reduced to only two cases in two small scale STWs and the problems were rectified immediately.

In our construction works, two contractors were convicted of environmental offences that took place in 2005. One related to discharge into communal sewer and the other related to disposal of wastes. In 2006, only one offence case was spotted, which was related to a discharge of muddy water by a contractor.



The Best Construction Sites Housekeeping Award was awarded to a contractor who managed the expansion of Shek Wu Hui Sewage Treatment Works & Upgrading of Ting Kok Road Pumping Station No. 5



A good example of environmental practice by a contractor - the use of an excavator equipped with water spraying device to suppress dust emission during excavation

To promote responsible behaviour at our sites, DSD continues to operate the "Construction Sites Housekeeping Award Scheme" in 2006. We granted 4 Best Awards and 4 Meritorious Awards to our consultants, contractors, and supervisory staff who performed very well on site safety, tidiness and environmental protection.

Besides, DSD commenced the preparation for the ISO 14001 Environmental Management System (EMS) in early 2006. With the help of an EMS, it is anticipated that DSD would move another step forward to our target of full environmental compliance in the near future.

Odour Control

Odour is an area of growing public concern. It may be generated from a sewage pumping station, a sewage treatment plant, and even a drainage system for the rainwater into which large quantities of organic materials are illegally discharged. Calcium nitrate is the chemical commonly used to prevent the production of odour in sewage. When odour is generated, it can be mitigated by odour removal unit such as activated carbon filter or biotrickling filter. As chemicals and energy are resources that we aim to save, DSD has a challenge in balancing the odour control and conservation of resources.

渠務署
香港特別行政區政府

總部

ISO 9001 及 ISO 14001
綜合管理系統政策

渠務署總部承諾本署對環境負責的態度，提供優質的專業、技術和行政服務，支援本署建立及維持達至世界級水平的雨水排灌和污水收集系統，以及污水處理車廠設施。

我們承諾

- 遵守適用於的條例、法規及其他規定。
- 推行預防性的措施以減少對環境造成的影響。
- 為員工提供足夠的資源和必要的培訓。
- 持續改善服務表現和環保成效。
- 以殷勤服務的態度理解及回應客戶不斷提升的期望。
- 向全體員工、供應商、顧問、承建商和市民大眾傳達這項政策。
- 發展、推行和維持一套符合ISO 9001及ISO 14001要求的綜合管理系統。

徐偉
管理層代表
二〇〇七年三月

Drainage Services Department
Government of the Hong Kong Special Administrative Region

Headquarters

ISO 9001 & ISO 14001
Integrated Management System Policy

DSD HQ are committed to providing high quality professional, technical and administrative services in an environmentally responsible manner to support the Department to develop and maintain world-class drainage and sewerage systems and sewage treatment and disposal facilities.

We are committed to:

- Diligently observing applicable statutory, regulatory and other requirements.
- Implementing pollution prevention measures to alleviate impacts on the environment.
- Providing adequate resources and necessary training to our staff.
- Adopting a continual improvement approach towards service and environmental performance.
- Understanding and meeting rising aspirations of customers in a courteous manner.
- Communicating this policy to all our staff, suppliers, consultants, contractors and the public.
- Developing, implementing and maintaining an Integrated Management System (IMS) that complies with ISO 9001 and ISO 14001 requirements.

TSUI Wai
Management Representative
March 2007

ISO 9001 & ISO 14001 Integrated Management System Policy

Environmental Performance

Green Office

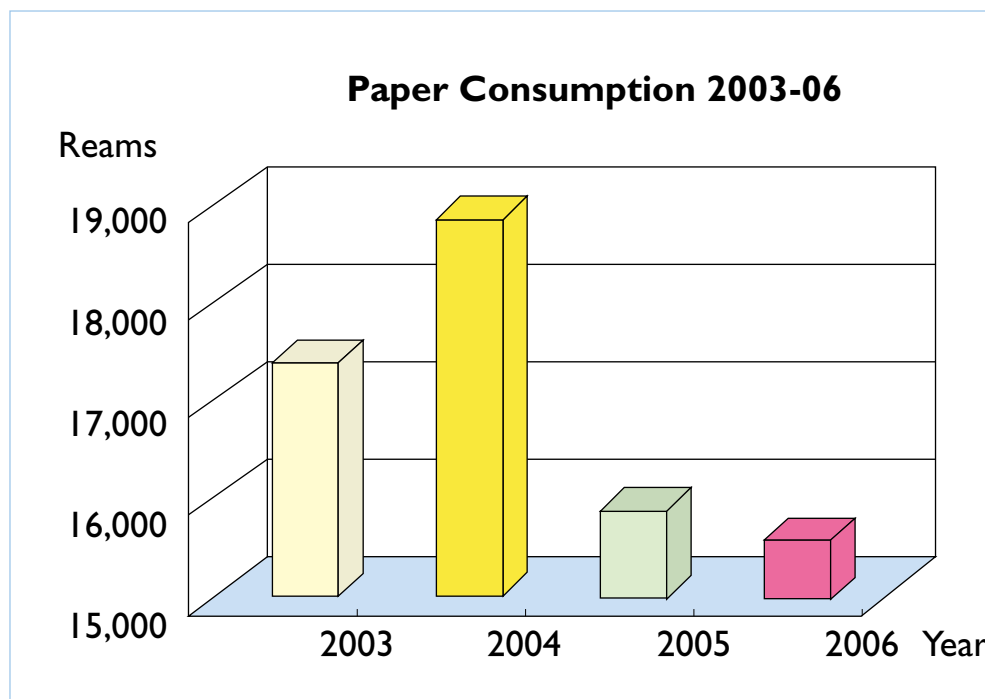
Green Survey

DSD launched a quarterly green survey of office practice starting from December 2004 to promote the awareness of staff on conservation of energy and resources in our operation. In 2005, we kept on reminding staff of the green practice and publishing the outstanding performance so that we achieved a reduction of the number of irregularities by 50%. Throughout 2006, we made further improvement. The number of irregularities at the end of 2006 was further reduced to a level of less than 15% of the level at the end of 2004. Generally speaking, our staff have established the practice of using paper in an environmental acceptable manner. However, we need to pay more attention to switching off the accessories of the personal computer when they are not in use for a long period of time.

Paper Consumption

In addition to our practice of double-sided printing, avoiding printing and reusing papers, DSD

has implemented an Electronic Document Management System (eDMS) to advocate "paperless in office" to staff. The eDMS was officially launched in Kowloon Government Offices (KGO) in July 2006. eDMS tracks and stores electronic documents, and images paper documents. Our staff at the KGO office now handle most incoming and outgoing documents including memo, letter, fax and email without the use of paper. In addition, our staff can search specific documents quickly to save time, and keep the latest version of documents in electronic format without printing any hard copies of different versions each time. The initial result is encouraging and we aim to extend the application of eDMS to other offices in the near future. By the end of 2006, we have already cut down the annual paper consumption by 16% of the 2002 level, which is well above the target of 10% reduction of the 2002 level proposed by the Environmental, Transport and Works Bureau.



Paper Consumption and Recycling 2003-06

	Paper consumed (reams)	Paper consumed per staff (reams)	Waste paper collected (kilograms)
2003	17,300	8.9	9,290
2004	18,810	9.7	12,360
2005	15,789	7.7	21,733
2006	15,437 (1)	7.7	23,126

(1) In 2006, 91% of the paper consumed was recycled paper. This has exceeded our target of 70% of total printing paper consumed to be recycled paper.

Staff Training

DSD continues to provide training to staff to refresh and update their environmental knowledge, and to enhance their environmental awareness and competency. In 2006 we conducted 9 training courses on the topics of air pollution control, waste management, energy conservation, tree preservation, environmental compliance and other special

environmental subjects. To cope with the development and implementation of ISO 14001 environmental management systems in DSD, we provided ISO 14001 awareness training courses for all staff in 2006. We also planned to provide additional training on internal auditing relating to ISO 14001 to be conducted in 2007.

Stakeholder Relations

DSD maintains effective communications with our stakeholders as they provide useful feedback to us to minimize the impact of our operations on the environment. In 2006 we invited green groups, academics, and other government departments to visit a constructed wetland in Yuen Long, which was

used to minimize the ecological impact of the flood prevention project in Yuen Long. We also invited members of the District Council to visit our sewage treatment plants to alleviate their concerns on the odour problem.



Members of green groups and academics visited a wetland of the Yuen Long Bypass Floodway Project



A group of secondary school students visited Ngong Ping Sewage Treatment Works in July 2006



DSD staff explained the chemically enhanced primary treatment process to visitors during the Open Day of the Stonecutters Island Sewage Treatment Works



School children visited the Information Centre at the Stonecutters Island Sewage Treatment Works during the Open Day in March 2006



The Director of Drainage Services, Mr. WONG Chee-keung, JP (far left) joined the community tree planting activity at the wetland of San Tin Eastern Main Drainage Channel in the summer of 2006

Achievement of Environmental Targets

Targets/measures for 2006	Target Performance	Remarks
A. Resource Conservation		
A1. Energy efficiency in plants		
A1.1 To save 2.1 million kWh of energy in 2006.	Target met.	Actual saving in 2006 is 2.5 million kWh.
A1.2 To carry out two energy audits for sewage treatment facilities in each sub-division.	Target met.	A total of 8 energy audits were carried out in ST1 & ST2 divisions.
A2 Energy Conservation in DSD offices		
A2.1 To install timers on 50% of all share-use network printers to save energy and to meet the demand for printing after normal working hours.	Target met.	75% of share-use network printers have been equipped with timers.
A2.2 To reduce the no. of non-compliance relating to energy conservation in Green Surveys findings in 2006 to 90% of 2005 level.	Target met.	The numbers of non-compliance items were reduced to 55% of the 2005 level.
A3 Paper Conservation		
A3.1 To reduce annual paper consumption to 16,540 reams i.e. 90% of 2002 level.	Target met.	Only 15,437 reams of paper were consumed.
A4 Consumption of chemicals		
A4.1 To carry out one audit on chemical consumption in each division to identify areas for further saving.	Target met.	ST1 carried out one chemical audit at Shatin STW and ST2 carried out one chemical audit at SCISTW.
A5. Office supplies		
A5.1 To reduce consumption of whole ball pens by 30% of 2004.	Target met.	Whole ball pens consumption was reduced by 44% of the 2004 level.
B. Waste Reduction		
B1.1 To recycle 70% of printer cartridges consumed in all offices of DSD.	Target met.	91% of printer cartridges were recycled.
B1.2 To recycle 70% of rechargeable batteries consumed in plants.	Target met.	ST1 has just finished replacing use of normal batteries with rechargeable one, no rechargeable batteries wastes in year 2006. ST2 recycled 100% of rechargeable batteries.
C. Minimizing impact on the Environment		
C1 Green Procurement		
C1.1 To use recycled paper up to a level of 70% of DSD's total printing paper consumption.	Target met.	91% of the total printer paper consumed to be recycled paper.
C2 Compliance		
C2.1 To aim at achieving full compliance with legal environmental requirements at our sewage treatment works and sewer and land drainage systems.	Target partially met.	The number of non-compliance cases reduced to two.
C2.2 To closely supervise our construction sites aiming at full compliance with legal requirements.	Target partially met.	Only one offence relating to Water Pollution Control Ordinance was spotted. Two offences convicted in 2006 were incidents happened in 2005.
D. Staff Development		
D1.1 To organize 6 environmental training events to raise staff's environmental awareness and competency.	Target met.	9 environmental training events had been arranged.
E. Environmental improvement		
E1.1 To plant a cumulative total of 35,000 trees and 680,000 shrubs from 2004.	Target met.	Beginning from 2004, a cumulative total of 36,130 trees and 685,862 shrubs were planted.
E1.2 To create/restore a cumulate total of 38 ha of wetland/fish ponds from 2004.	Target met.	Beginning from 2004, a cumulative total of about 40 ha of wetland/fish ponds were created/restored.
F. Development of ISO 14000 Environmental Management System		
F1.1 To commence the establishment of Environmental Management Systems for the whole Department in 2006 aiming at obtaining ISO 14001:2004 certifications in 2007.	Target met.	Preparation for Integrated Management Systems (Environmental and Quality Management Systems) commenced in mid 2006. ISO 14001 certification audits will be carried out in late 2007.

Environmental Targets for 2007

A. Energy Conservation

- A1. Energy Efficiency in Plants
To implement energy saving measures in ST1 & ST2 to achieve further energy saving of 0.9 million kWh
- A2. Energy Conservation in DSD Offices
To conduct energy audits at offices in Revenue Tower, Kowloon Government Office & Western Magistracy to identify opportunities for further energy saving

B. Chemical Conservation

- B1. To carry out one audit on chemical consumption in each division to identify areas for further saving

C. Paper Conservation

- C1. To reduce annual paper consumption to 16,200 reams, i.e. 98% of 2006 allocation level

D. Waste Reduction and Recovery

- D1. To recycle 80% of printer cartridges consumed in all offices
- D2. To recycle 70% of rechargeable batteries used in plants

E. Green Procurement

- E1. To use recycled paper up to a level of 80% of DSD's total printing paper consumed

F. Environmental Compliance

- F1. To aim at achieving full compliance with legal environmental requirements at our sewage treatment works and sewer and land drainage systems
- F2. To closely supervise our construction sites aiming at full compliance with legal requirements

G. Ecological Enhancement

- G1. To plant a cumulative total of 39,000 trees and 760,000 shrubs from 2004
- G2. To create/restore a cumulative total of 40 ha of wetland/fish ponds from 2004

H. Environmental Management System

- H1. To obtain ISO 14001:2004 certificate

I. Environmental Awareness

- I1. To organize two in-house green campaigns to promote staff awareness and active participation in greening activities



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