渠務署
Drainage Services Department

2010 環境報告 ENVIRONMENTAL REPORT

Solar panels at
Yuen Long Sewage
Treatment Works

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渠務署
Drainage Services Depart

CHAN Chi-chiu
Director of Drainage Services

FOREWORD

Climate change is a major issue that affects everybody, and continual concerted effort from each and every individual and organization is needed to minimize its impact on us. DSD is fully committed to take an active role to address climate change when delivering a sustainable world class drainage service to the people of Hong Kong.

In essence, our responses to climate change rest on the four pillars of research and development, international networking, improvement on construction practice, and behavioural change at individual and corporate level.

On flood prevention, we have just completed the review of the drainage master plans for Yuen Long and North District taking into consideration the possible seawater level rise due to climate change. In training of river for flood prevention, we would maintain the natural habitat and create ecological features as much as possible. In 2010, we completed the widening of the Ho Chung River and the Pak Ngan Heung River with many ecological enhancements.

We are mindful that sewage treatment is an energy intensive operation. In 2010, we saved an extra 1.19 million kWh of energy on top of the earlier saving of 3.43 million kWh in the last three years. The installation of the combined heat and power (CHP) plant that converts methane, the biogas from digestion of sewage sludge, to heat and power is one of the major contributors on energy saving. As methane is a greenhouse gas that causes climate change, additional CHP plants will be installed in the coming years, and by 2013, all biogas from sewage treatment will be converted to heat and energy for reuse.

DSD offices, buildings, and construction sites are green. We have completed 16 green roof projects at the end of 2010, and planted about 1,700 trees and 630,000 shrubs in 2010. We also practise green procurement in our works.

You may find much more details of our activities relating to the environment in this report. I hope you enjoy reading it and I would be most pleased if you would provide us with feedback to help us improve further on our works.

CHAN Chi-chiu
Director of Drainage Services

VISION, MISSION AND VALUES

Vision

To provide world-class wastewater and stormwater drainage services enabling the sustainable development of Hong Kong

Mission

- Improving drainage services in a cost-effective and environmentally responsible manner
- Enhancing a caring, harmonious, safe and healthy work environment that fosters staff development and a mindset for change
- Strengthening relationships with community, industry and worldwide counterparts

Values

- Customer Satisfaction
- Quality
- Commitment
- Teamwork

Green roof at Shatin Sewage Treatment Works

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.

Plants on green roof at Shatin Sewage Treatment Works

Environmental Goals

Our environmental goals are:

- To provide and operate world-class sewerage/ drainage systems and sewage treatment/disposal facilities to fulfill 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.

Yuen Long Sewage Treatment Works

Green roof at Shatin Sewage Treatment Works

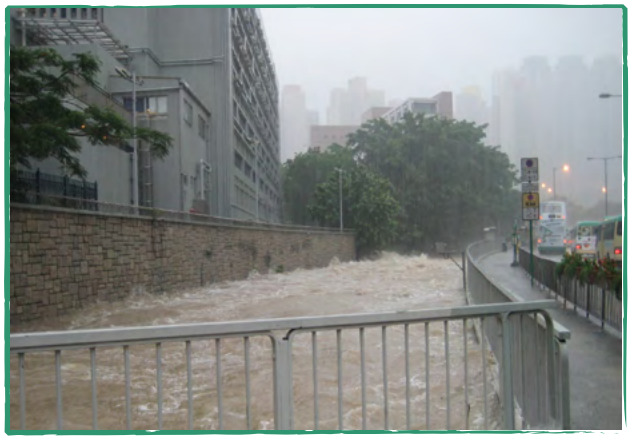
RESPONSIBILITIES

Responsibilities

DSD is responsible for flood protection, and collection and treatment of sewage in Hong Kong. On flood protection, the major activities include the planning and implementation of the drainage systems under each Drainage Master Plan, the river channel management in the New Territories, and the operation of flood protection facilities. On sewage collection and treatment, DSD designs, constructs, operates, and maintains sewerage system and sewage treatment plants with respect to the Sewerage Master Plans prepared by the Environmental Protection Department.

Flood Protection

With an average annual rainfall exceeding 2,300 mm, one of the highest among the cities in the Pacific Rim, flooding is a serious concern in the low-lying areas of the northern New Territories and the old urban areas. DSD is tasked to reduce the risk of flooding and has been implementing a massive flood prevention programme. It includes the development of drainage tunnel, the training of river, the provision of village flood protection scheme, and the undertaking of urban drainage improvement works. The construction of the $3 billion Hong Kong West Drainage Tunnel that collects stormwater from Northern Hong Kong Island has been carrying out satisfactorily. When completed in 2012, the flood protection level in most areas of northern Hong Kong Island will be able to withstand rainstorms with a return period of one in 50 years. To ensure that stormwater finds its way into the sea without causing flooding, DSD carried out regular maintenance works on 2,611 km of drainage channels and stormwater drains, and 27 village flood protection schemes in 2010.



Flooding at Kai Tak Nullah

Trained river channel at Luk Tei Tong, South Lantau

Anglers' Beach along Tsuen Wan coast

Sewage Collection and Treatment

DSD collected and treated 976 million cubic metres of sewage in 2010. The facilities for handling the sewage include 67 sewage treatment works (STW), 212 sewage pumping stations, 43 submarine outfalls, 3 effluent disposal tunnels, and 1,630 kilometres of sewers.

DSD continued to expand and upgrade the collection and treatment of sewage. The sewerage for collecting sewage from villages is now covering about 140 villages, and works are being carried out to extend the coverage to an additional of about 30 villages. To help improve the water quality of the beaches in Tsuen Wan, DSD has completed the sewerage covering the hinterland of the beaches along the Castle Peak Road, and installed a disinfection process in the Stonecutters Island STW under the Harbour Area Treatment Scheme 2A. As a result, some of the beaches in the Tsuen Wan area have been scheduled for reopening in 2011 for recreational use.

To facilitate the work on effluent reuse, DSD conducted a pilot study to obtain additional technical information on further treatment of effluent in Hong Kong. Eleven different sewage treatment processes incorporating microfiltration or reverse osmosis were installed in various sewage treatment facilities for trial. A water reclamation information centre within the Shatin STW was opened in late 2010.

Sewerage under construction at Wing Ning Tsuen, Fanling

Effluent reuse treatment units next to the Water Reclamation Information Centre at Shatin STW

Total Sewage Flow in the Last 5 Years

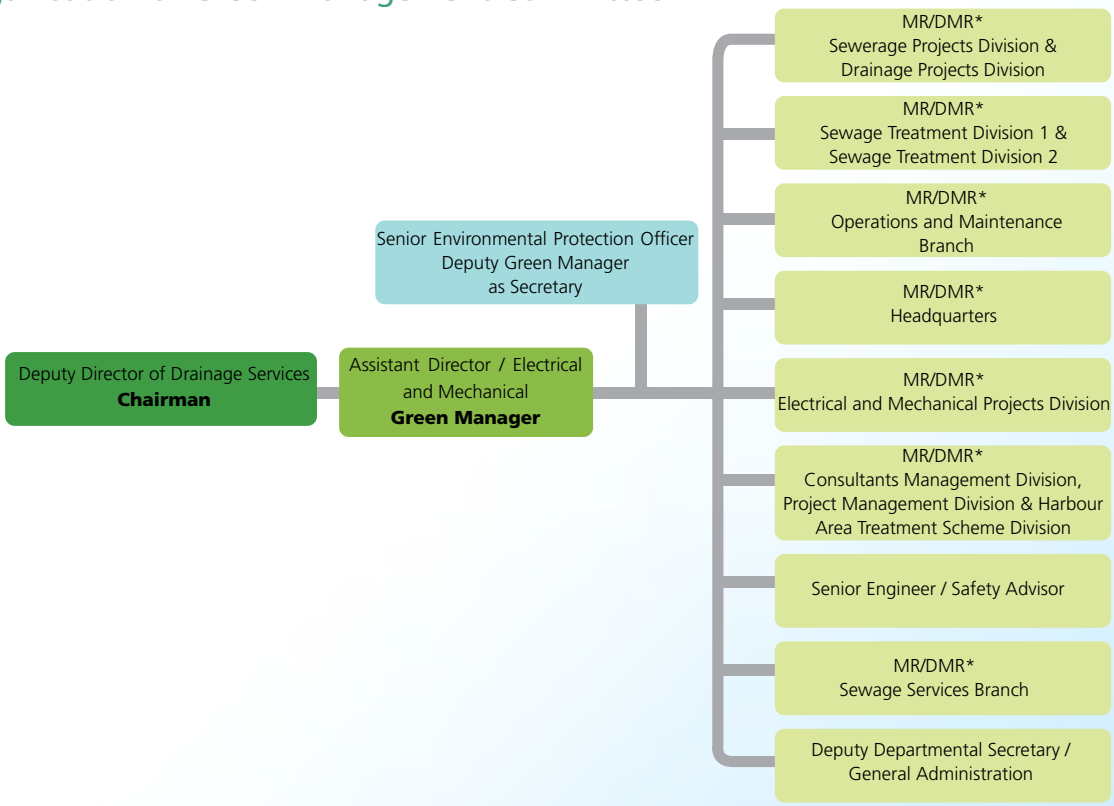
North Point Preliminary Treatment Works

ENVIRONMENTAL MANAGEMENT

DSD has an establishment of approximately 1,860 staff, consisting of about 300 professional staff, 1,060 technical and general staff, and 500 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. There are seven Integrated Management Systems under ISO 9001 and ISO 14001 covering all aspects of work of DSD.

The Deputy Director chairs a Green Management Committee to formulate and review the environmental policies and goals of the department. The Committee monitors the performance of environmental targets, and promotes staff awareness and involvement in protecting the environment. Members include the Management Representative or Deputy Management Representatives of each Integrated Management System under which the environmental policies are implemented and monitored. A green manager at the Assistant Director level with assistance from a senior professional and the departmental administration oversees and coordinates the day-to-day green issues.

Organisation of Green Management Committee



* MR/DMR: Management Representative / Deputy Management Representative of the ISO 9000 and ISO 14001 Integrated Management System

Yuen Long Sewage Treatment Works

ENVIRONMENTAL PERFORMANCE

This chapter presents our environmental performance on the following areas:

- Achievements in Sewage Treatment
- Environmental Compliance and Monitoring
- Ecological Enhancement
- Green Procurement
- Green Office
- Clean Air Charter
- Odour Management

Achievements in Sewage Treatment

In 2010, we operated 67 sewage treatment works with different levels of treatment throughout Hong Kong (details are shown at our website, www.dsd.gov.hk). The treatment level depends primarily on where the effluent is discharged into, as different water bodies in Hong Kong have different waste assimilation capacities and beneficial uses.

Sludge holding tank at Yuen Long Sewage Treatment Works

The major pollutants removed from the sewage in our sewage treatment works are organic materials, often measured as biochemical oxygen demand (BOD), and suspended solids (SS). In certain areas, nutrients such as nitrogen that promote the growth of aquatic plant are removed to prevent algal bloom. In 2010 we removed about 117,500 tonnes of BOD, 148,500 tonnes of SS, and 5,000 tonnes of nitrogen.

The pollutants removed from sewage produced 808 tonnes of dewatered sludge per day, or about 295,000 tonnes for the whole year. The sludge was dewatered to reduce its volume before it was sent to landfills for disposal. This saves landfill space and helps extend the life-span of our landfills. Other than sludge, screenings and grit were also removed from sewage treatment. In 2010 we disposed of about 16,300 cubic metres (or 12,500 tonnes) of screenings, and 7,500 cubic metres (or 5,000 tonnes) of grits.

The disinfection facility in the Stonecutters Island STW came into operation in early 2010. It has reduced the bacteria in the effluent by more than 99%, and contributed significantly to the improvement of the bacteriological water quality of the bathing beaches in the Tsuen Wan area. As a result of such improvement, some of the beaches were re-opened in 2011.

Disinfection facilities at Stonecutters Island STW

The pilot scheme in 11 sewage treatment works to evaluate the technical practicality of effluent reuse with various level of treatment went very well in 2010. The installation at the Shatin STW was completed in mid 2010, and about 1 000 cubic metres of reclaimed water was produced for non-potable uses such as toilet flushing, irrigation and preparation of chemical solution within the plant.

Reverse Osmosis Plant at Yuen Long STW

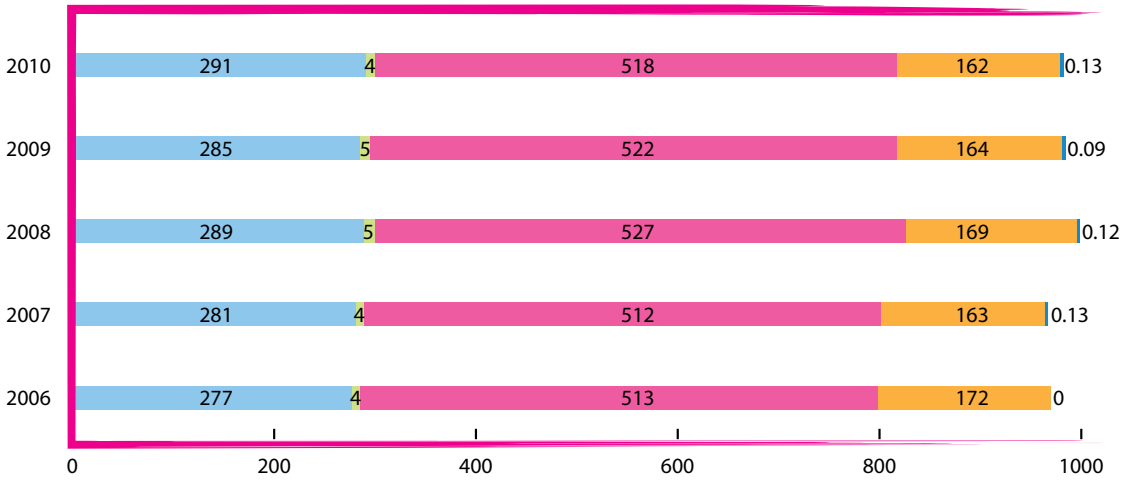
Ultra-filtration Plant at Sai Kung STW

A Water Reclamation Information Centre was set up inside the Shatin STW to provide a platform for educating the public on reuse of treated effluent, and enhancing liaison among local communities, the trade as well as relevant organizations around the world. DSD believes that the centre would help demonstrate the department's commitment and contribution to the sustainable development in Hong Kong.

Water Reclamation Information Centre at Shatin STW

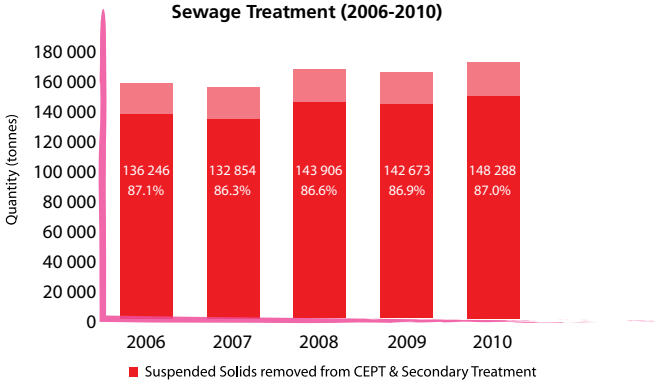
Reclaimed water for irrigation at Shatin STW

Distribution of Levels of Sewage Treatment (2006-2010) (in Mm³)

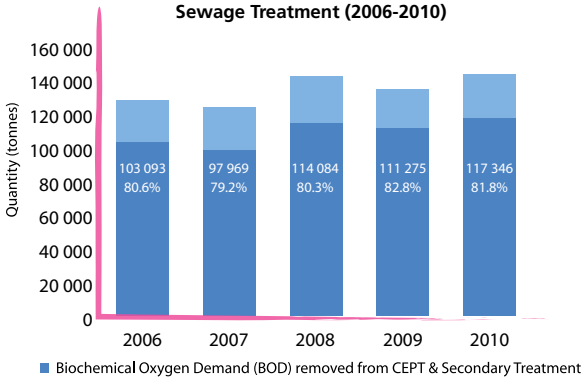


	2006	2007	2008	2009	2010
Preliminary Treatment (million m3)	277	281	289	285	291
Primary Treatment (million m3)	4	4	5	5	4
Chemically Enhanced Primary Treatment (million m3)	513	512	527	522	518
Secondary Treatment (million m3)	172	163	169	164	162
Tertiary Treatment (million m3)	0	0.13	0.12	0.09	0.13

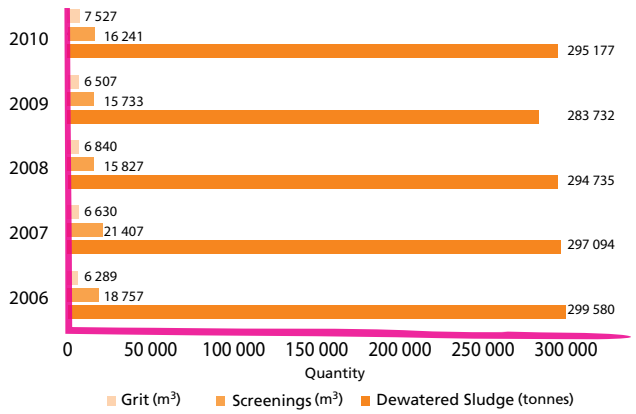
Removal of Suspended Solids in Sewage Treatment (2006-2010)



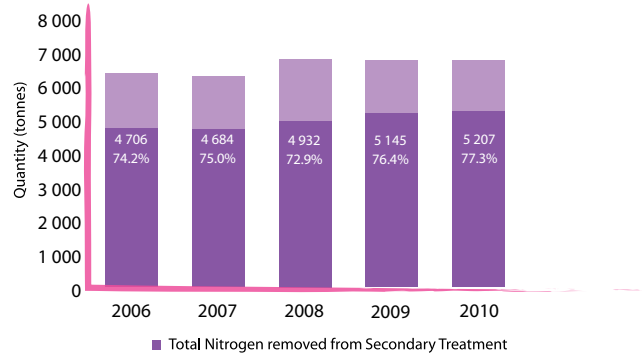
Removal of Organics in Sewage Treatment (2006-2010)



Solids Removal from Sewage Treatment (2006-2010)



Removal of Nitrogen in Sewage Treatment (2006-2010)



Environmental Compliance and Monitoring

The sewage treatment works that we operate are all licensed under the Water Pollution Control Ordinance, and some have additional control under the Environmental Impact Assessment Ordinance. Each month, self-monitoring results of the performance of the sewage treatment works are provided to the Environmental Protection Department for compliance check. In 2010, we achieved our target of full compliance of the license conditions.

To promote responsible behaviour at our construction sites, DSD continued to operate the Construction Sites Housekeeping Award Scheme in 2010. All contracts that had an active construction period of six months or more within the assessment period (from January to October, 2010) were included in the Scheme. Each construction site was visited four times by senior or chief professional staff for assessment. The contractor and consultant/in-house site supervisory staff engaged in the contract were encouraged to work as a team to keep the site clean, tidy, hygienic and environmentally friendly. Even with more than 40 active construction contracts in 2010, our staff together with our consultants and contractors managed to achieve a very good record on environmental protection without any case of conviction under environmental legislation.

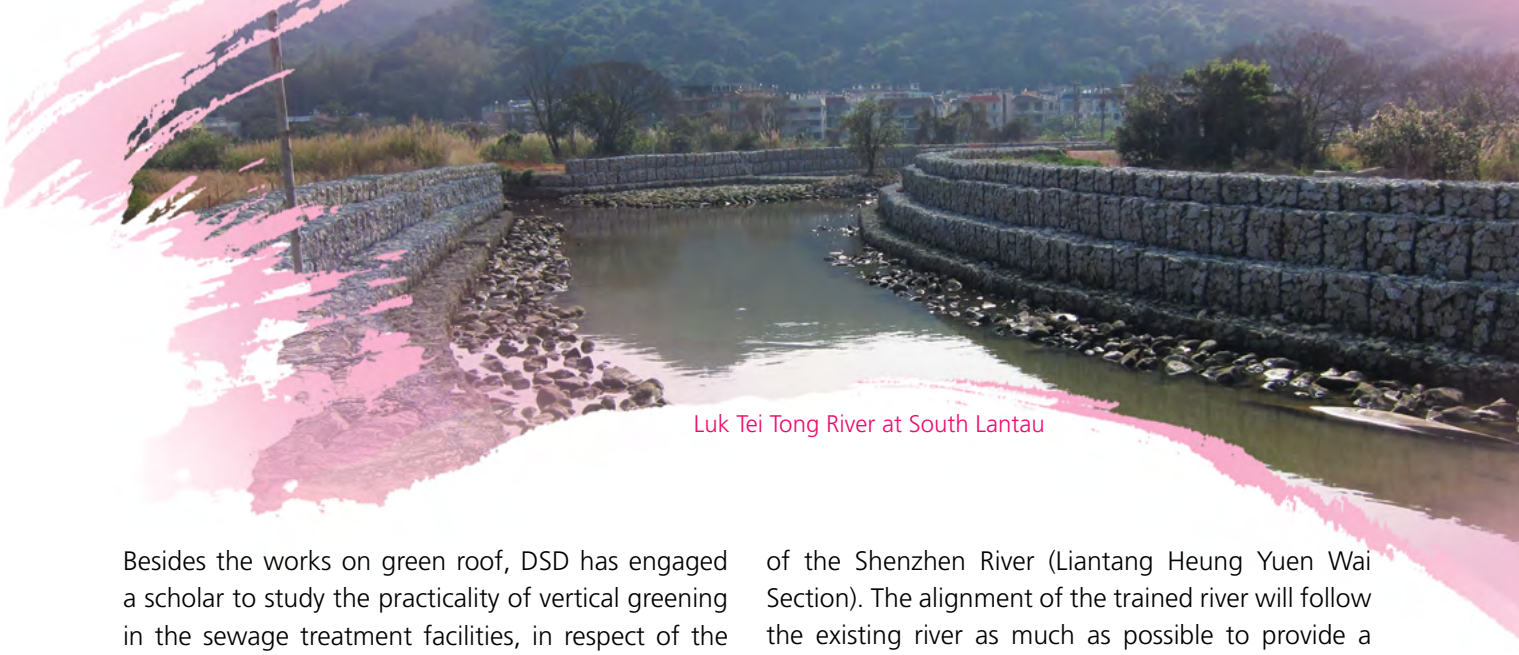
Presentation of the Construction Sites Housekeeping Award

Ecological Enhancement

DSD has been promoting green roof for a few years and our continual effort starts bearing fruits for the community. In 2010, DSD won the Gold Medal in the Hong Kong Institute of Landscape Architects Landscape Design Awards for our greening works at Sha Tin STW. Today, there are more than 16 numbers of green roofs in our buildings covering 5,600m^2. The green roofs not only create a better view for the neighbours of the drainage facilities, but also help alleviate the hot island effect and lower the temperature of the building in the summer.

Green roof at Ma On Shan Sewage Pumping Station

Display panels on works contract winning the Award



Luk Tei Tong River at South Lantau

Besides the works on green roof, DSD has engaged a scholar to study the practicality of vertical greening in the sewage treatment facilities, in respect of the operational parameters and the suitable plant species. Shatin STW was selected for the study and the findings of the study would help formulate strategy on vertical greening in other DSD facilities.

The positive feedback from the communities on the recently completed ecological channels, such as the Ho Chung River and Pak Ngan Heung River, provide much encouragement to DSD staff to strike a difficult balance between reducing the risk of flooding and enhancing ecological value. There was increasing public voice on demanding an ecological channel named Kai Tak River instead of the original demand for a decked Kai Tai Nullah in 2010. Our staff and the consultants have been working closely with the Civil Engineering and Development Department to revitalize the Kai Tak River for the Kai Tak Development.

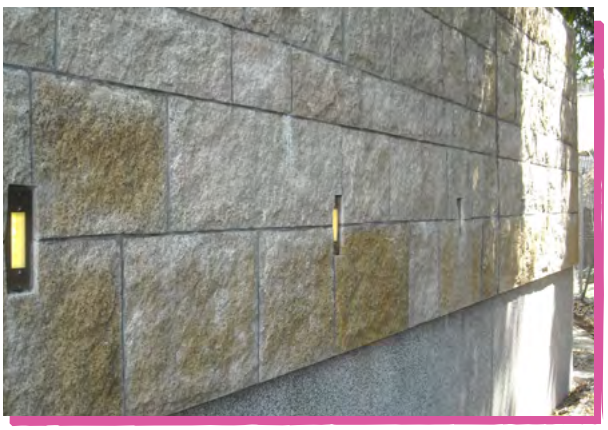
In the New Territories, land is relatively more easily available than that in the urban area for maintaining the ecological features in an engineered channel designed primarily for flood prevention. An ecological approach was adopted in Stage 4 of the regulation of the Shenzhen River (Liantang Heung Yuen Wai Section). The alignment of the trained river will follow the existing river as much as possible to provide a more natural habitat. The cross section of the river will be in trapezoidal shape with grasscrete on the side and natural river materials at the bottom.

Green Procurement

DSD provides full support to government's initiative on green procurement. The major green products purchased by DSD included copying machine and printer, stationery such as recycled paper, correction fluid, marker pen, pencil, and toilet paper etc.

As a works department, DSD also contributed to green procurement in construction materials. In addition to the production of reclaimed water from effluent of sewage treatment plants, DSD was actively engaged in R&D works on testing out the use of green materials in our projects. These included various works on green roof, the use of LED lighting, and the use of wind turbines and solar panels.

Vertical greening at Shatin STW



Use of LED lighting

Green Office

DSD offices are kept green. We continue our efforts in reducing waste and conservation of resources in our offices. We set our room temperature at 25.5°C, reduce lighting in the corridor, use recycled paper, and recycle printer cartridges, plastic, metal containers and fluorescent lamps. Besides organizing competition to promote green practices in office, we set up environmental inspection teams to check and remind staff of the green measures. These include the rational use of air-conditioning and water, turning off lighting, computers and the peripheral devices when they are not in use.

By practising green measures of using e mail, double sided printing, and avoiding the use of fax, we met our target on paper conservation. The paper usage was about 13,000 reams, which represents a 15 % reduction in the last four years. We aim to maintain the effort on paper conservation and set a target to further reduce paper consumption of 200 reams in 2011. With the recent advance in wireless communication technology, DSD started a pilot scheme on paperless meeting in late 2010. Feedback is now being collected from staff. It is anticipated that such measure would help reduce the consumption of paper further.

Promotion of green office

Paper Consumption and Recycling (2006 - 2010)

	2006	2007	2008	2009	2010
Paper consumed (reams)	15437	14046	13512	13558	12983
Waste paper collected (kg)	23126	13143	12770	15290	14974
Paper consumed per staff (ream)	7.7	7	6.8	7	6.7

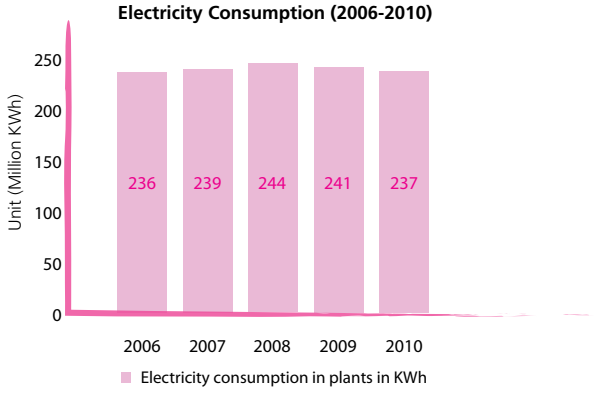
Clean Air Charter

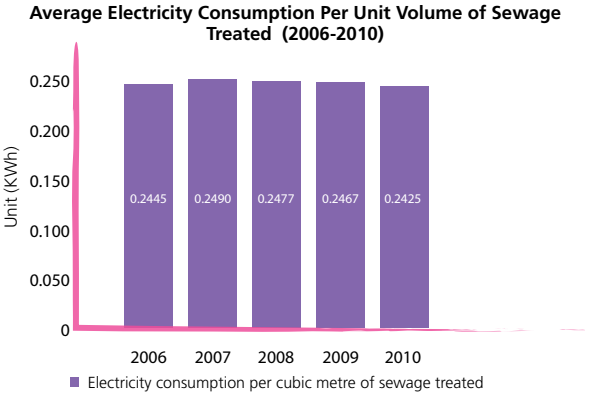
Following the signing of the Clean Air Charter by the Chief Executive of Hong Kong SAR Government in November 2006, DSD formed an Energy and Emission Management Team (EEMT) in early 2007. The team is headed by a Chief Engineer and is represented from each branch at the senior professional level to drive the initiatives on energy saving and emission reduction at all fronts of our operations. In the past five years, DSD had made continual progress in energy saving and emission reduction with details given below. With the purposes of showing our continual commitment and sharing our knowledge on environmental protection and energy saving to the public, we participated in the Hong Kong Awards for Environmental Excellence (HKAEE) in 2010. The award scheme is a prestigious recognition in environmental protection in Hong Kong. The team of Shek Wu Hui STW won the Certificate of Merit in 2010 HKAEE and this is the third time that we received the award for our STWs.

Energy Saving

In addition to the early saving of 3.43 million kWh in last three years, DSD saved an extra 1.19 million kWh of electricity in 2010. These savings were achieved by implementing a number of energy saving measures. These included the replacement of "fat tube" fluorescent lamps with T5 lamps, and flood lights with LED type lights at various plants, the use of variable speed drives and high efficiency motors for process equipment for sewage pumping and treatment, the implementation of power quality devices such as harmonic filters, and the adjustment of process timing in plant operation. Among these, the major contributors of energy saving in 2010 included the replacement of pumps for centrate at the dewatering house of Shatin STW, the commission of a new rising main for conveying the sewage from the Chinese University to Shatin STW in a new and shorter alignment, the minimization of high voltage air blowers' operation at Shek Wu Hui STW, the modification of centrifuges at Stonecutters Island STW to reduce energy consumption, and the use of high efficiency pumps and motors at Tsing Yi and Tsuen Wan Sewage Pumping Stations and Kwun Tong Preliminary Treatment Works.

To support the development of new technology in energy, DSD has taken every opportunity to promote the use of renewable energy. We have introduced the solar-wind power lamp poles at Shatin STW, and the combined heat and power (CHP) generators at Tai Po STW and Shek Wu Hui STW. An electric vehicle has been ordered for transportation of sewage/sludge samples from sewage treatment plants to our central laboratory.





Solar-wind power lamp poles at Shatin STW

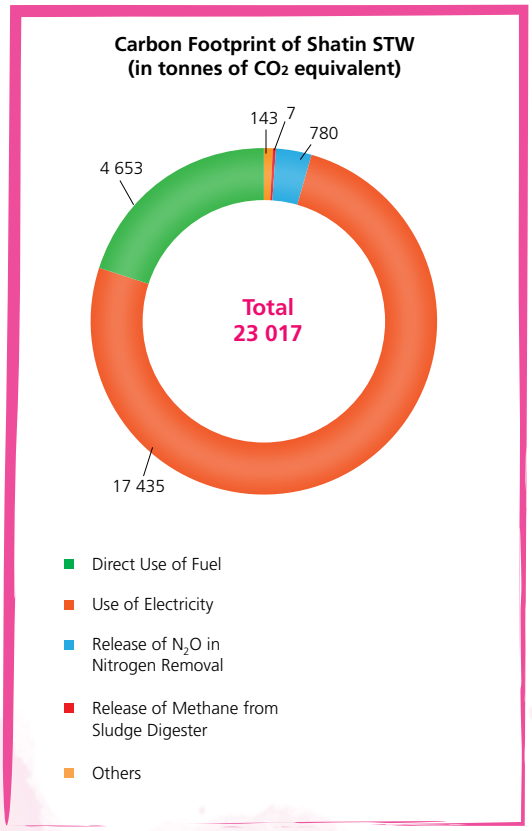
Renewable Energy

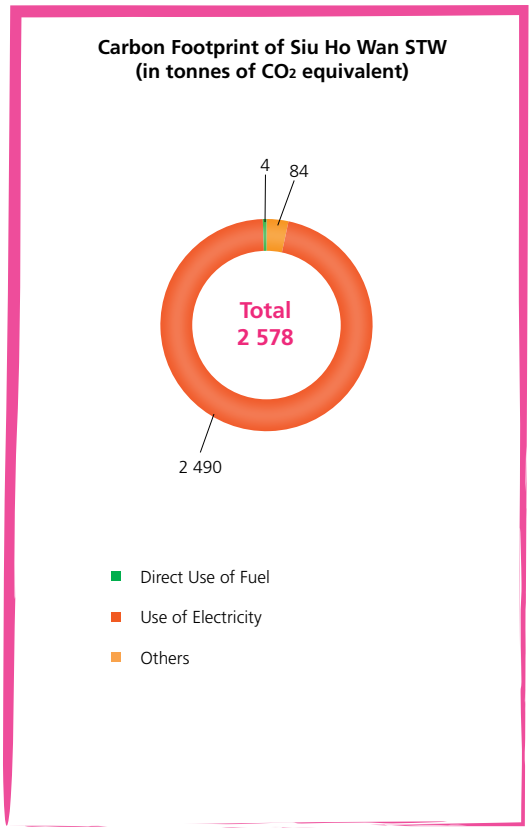
Biogas from the anaerobic digestion of sludge is a renewable energy source that can be utilized for recovery of heat and power. In 2010, a 625kW CHP generator was put into operation in Tai Po STW, and we plan to install three more new CHP generators with a total capacity of 2.65MW at Shek Wu Hui STW, Shatin STW and Tai Po STW respectively. By 2013 all the biogas generated from our sewage treatment works will be fully utilized.

We continued to implement our current measures on reducing emission which included the use of hybrid or environmentally friendly vehicles, the use of ultra low sulphur diesel, and the turning off of idle engines.

Carbon Audit

We conducted two carbon audits at Shatin STW and Siu Ho Wan STW in 2010, and revealed that they emitted about 23,000 and 2,600 tonnes of CO_2 equivalent in 2009 respectively. This was about 0.27 and 0.16 kg CO_2 equivalent emitted per cubic metre of sewage treated.



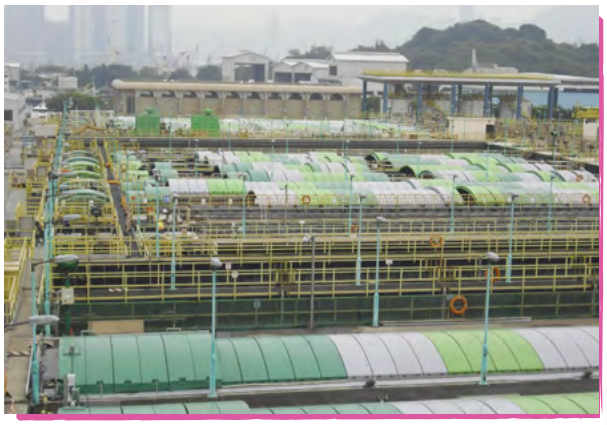


Odour Management

Odour management was one of the priority areas in our commitment to reduce the environmental impact of our operations. However, sewage by its own nature is offensive, and the high population density in Hong Kong makes the situation more complicated. For instance, new residential areas are moving closer and closer to the sewage treatment facilities when the new town is growing in size to accommodate more residents. For a city that adopts centralized sewage treatment, a larger town area means that the sewage would stay longer in the collection system before it reaches the sewage treatment plant. The longer detention time together with the high temperature in the summer make it an ideal situation for anaerobic bacteria to grow and produce hydrogen sulphide (a rotten egg smell gas) in the system.

DSD adopts a proactive approach to tackle the odour problem by using various methods. It starts from control at source by superoxygenation or adding chemicals in pumping stations to prevent the production of hydrogen sulphide by the anaerobic bacteria. When the odorous gas has unavoidably been formed, we cover the surface from which odour is generated and purify the air by wet chemical scrubber, bio-trickling filter, and/or activated carbon deodorization system. Sewage inlets of most of the sewage treatment works have been fully covered. In 2010, covers for sewage inlet were provided at Yuen Long STW, Chai Wan Preliminary Treatment Works (PTW), Kwun Tong PTW, Shaukiwan PTW and Tsing Yi PTW for odour control. Covers for the primary sedimentation tanks at the Shatin STW and Stonecutters Island STW were still underway as scheduled.

Deodourisation unit at Shatin STW



Covers at Stonecutters Island STW

STAKEHOLDER ENGAGEMENT

Staff Training

DSD continues to invest in human resources and promote knowledge sharing on sustainable drainage services. In 2010 we supported 30 staff to participate in overseas conferences and duty visits, and 280 staff to attend local conferences, seminars and training courses on environmental and sustainability matters. We also conducted 12 in-house training activities with a total participation of 795.

Community Engagement

DSD maintains effective communications with external stakeholders such as green groups, academia, professional organizations, Legislative Council members and District Council members to broaden our views in reviewing our services on flood prevention and sewage collection and treatment. This would also help us perform better in addressing the environmental impact of our projects.

District Council Visit to Tai Hang Tung Floodwater Storage Tank

Shatin STW Open Day

In 2010, we engaged our stakeholders on all major projects. These included the Yuen Long Nullah, the Ho Chung River, the Lam Tsuen River, the underground stormwater storage tank in Happy Valley, the advance disinfection in Stonecutters Island STW, and the major drainage tunnels. The Ho Chung River project has been completed and many ecological features can be found in the drainage channel. The advance disinfection facilities in Stonecutters Island STW facilitate the re-opening of bathing beaches in the Tsuen Wan area in 2011.

Additional information on stakeholder engagement can be found in our Annual Report.

Casam Beach in Tsuen Wan to be re-opened in 2011

ENVIRONMENTAL TARGETS

2010 Achievement of Environmental Targets

Environmental targets are set each year as a tool to help colleagues focus on the environmental quality that is of major concern to DSD. They are also important elements in the "Plan-Do-Check-Act" management cycle for continuous improvement.

DSD Environmental Targets 2010	Performance
A. Energy Conservation	**Target met**
A1. To reduce energy consumption by another 0.5% of the base level in 06/07.	Energy saving in 2010 was 1.19 million kWh, which was 0.5% of the base level of 06/07.
A2. To conduct two carbon audits in sewage treatment works.	Two carbon audits for STWs were conducted.
B. Water Conservation	**Target met**
B1. To increase the use of treated effluent from 318 m^3 per day to 1,320 m^3 per day.	The use of treated effluent achieved the target of 1,320 m^3 per day by end of 2010.
C. Paper Conservation	**Target met**
C1. To reduce annual paper consumption to 15,300 reams.	Only 12,983 reams of paper were consumed.
D. Waste Recovery	**Target met**
D1. To increase the recycle rate of printer cartridges to 95%.	99.2% printer cartridges were recycled.
D2. To increase the recycle rate of rechargeable batteries used in plants to 95%.	100% of rechargeable batteries used in plants were recycled.
E. Green Procurement	**Target met**
E1. To use recycled paper up to a level of 95% of DSD's total printing paper consumed.	99.2% of printing paper consumed was recycled paper.
F. Environmental Compliance	**Target met**
F1. To aim at achieving full compliance with legal environmental requirements at our sewage treatment works, and stormwater and sewage collection systems.	Full compliance of legal environmental requirements was achieved.
G. Ecological Enhancement	**Target met**
G1. To plant 1,600 trees and 295,000 shrubs.	1,700 trees and 630,000 shrubs were planted in 2010.
H. Environmental Awareness	**Target met**
H1. To organise one in-house green campaign to promote staff awareness and active participation in greening activities.	A "Safe, Tidy and Green Office Competition" under staff motivation scheme was organised in the 4th quarter of 2010.

Environmental Targets for 2011

DSD Environmental Targets 2011	
A.	Energy Conservation
A1.	To reduce energy consumption by another 1.2% of the base level in 06/07.
A2.	To conduct two carbon audits in sewage treatment works.
B.	Water Conservation
B1.	To maintain the use of treated effluent at 1,320 m^3 per day.
C.	Paper Conservation
C1.	To reduce annual paper consumption to 14,900 reams.
D.	Waste Recovery
D1.	To increase the recycle rate of printer cartridges to 97%.
D2.	To increase the recycle rate of rechargeable batteries used in plants to 97%.
E.	Green Procurement
E1.	To use recycled paper up to a level of 97% of DSD's total printing paper consumed.
F.	Environmental Compliance
F1.	To aim at achieving full compliance with legal and environmental requirements at our sewage treatment works, and stormwater and sewage collection systems.
G.	Ecological Enhancement
G1.	To plant 2,600 trees and 135,000 shrubs.
H.	Environmental Awareness
H1.	To organise two in-house green campaigns to promote staff awareness and active participation in greening activities.

HKQAA
HONG KONG QUALITY ASSURANCE AGENCY
香港品質保證局

INDEPENDENT VERIFICATION STATEMENT

Scope and Objective

Hong Kong Quality Assurance Agency (HKQAA) was commissioned by Drainage Services Department (hereinafter called "DSD") to undertake an independent verification of the Environmental Report 2010 (hereinafter called "the Report"). The Report stated the past performance of DSD on the environmental aspect for the period of 2010.

The purpose of this verification exercise was to independently review the materiality, completeness, accuracy, consistency and reliability of the information presented in the Report.

Methodology

The verification procedure included reviewing relevant documentation and verifying selected sample of data and information consolidated in the Report. Accuracy of the sampled data and the underlying processes were tested through detailed examination of available evidence to support substantive comments and claims made in the Report. The data and information were carefully verified for accuracy and cross-checked with third party information when available.

Conclusion

After a thorough and detailed examination of the Report, our verification team concludes that the Report provided a structured, balanced and consistent representation of DSD's environmental performance for the reporting period. All selected data examined during our verification were consistent with the supporting information reviewed.

In conclusion, the information provided in the Report is considered to be material, complete, accurate, consistent and reliable in the presentation of DSD environmental performance and achievements for the reporting period, to the best knowledge of our verification team.

Signed for and on behalf of HKQAA

Winniss Kong
Verifier

Macy Wong
Verifier

July 2011