

Environmental Report 2011



同心展關懷

caringorganisation²⁰⁰⁹⁻¹²

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香港社會服務聯會頒發



Highways Department

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Environmental Objectives and Targets for 2012



Director's Message

It is my pleasure to present to you our 2011 Environmental Report which summarized our environmental initiatives, efforts and achievements in the past year and our environmental targets and initiatives for 2012.

In this report, you will see our efforts in evaluating the impact on the environment at all stages of our road projects, giving due consideration to environmental related issues when carrying out our works. Examples of such efforts include the special attention devoted to the treatment of marine sediments in Central-Wan Chai Bypass and Island Eastern Corridor Link Project with a view to reducing the potential hazards to marine life and improving water quality in Causeway Bay Typhoon Shelter. We have implemented carefully designed noise mitigation measures for the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link project in order to preserve the quiet ambient atmosphere of the Mai Po area.



To take forward the Government's transport policy of developing the environmentally-friendly railway system as the backbone for mass public transportation, we have continued to play an active role in the planning and implementation of a world class railway system. The West Island Line and the Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link were in full steam construction in 2011. The Kwun Tong Line Extension and the South Island Line (East) commenced construction in mid-2011. The Shatin to Central Link remained in the design phase in 2011 but has recently commenced construction. A consultancy study to review and update the "Railway Development Strategy 2000" is also under way.

To seek enhancement to the environmental performance of our works, we are mindful to factor environmental issues identified into our research, development and deployment of environmentally friendly technology. Our achievements included the increased use of recycled asphalt pavement, adoption of paving blocks with recycled glass in road maintenance contracts, the use of synthetic gully grating and the increased application of hot-in-place recycling by thermal patcher for pavement preservation works.

We promote environmental consciousness as well as exchange of ideas amongst our colleagues and counterparts in partnering organizations by organizing training courses on Environmental Management System, environmental monitoring and noise assessment for our staff as well as conducting joint seminars, workshops and campaigns with contractors and consultants on health, site safety and environmental protection. We also encourage our contractors to organize and participate in various environmental promotional activities.

We never forget that our mission is to serve the public and to strive to meet users' expectation. To this end, we conducted a bi-annual customer satisfaction measurement exercise in 2011 to measure the degree of satisfaction among the public towards our services including our promise to protect the environment. The preliminary results indicated that general public is quite satisfied with our performance on this aspect. In addition, we have been disseminating information about our projects to the public and collecting their feedback through various channels. Such exchange enables us to understand more about their perception of our works and to continue enhancing our services.

Our annual environmental management plan always has clear objectives and targets. The targets we set for ourselves in 2011 have largely been achieved although there are rooms for us to catch up. In addition, our dedicated efforts in green management have earned us recognition. We are honored to receive three Outstanding Environmental Management and Performance Awards, six Considerate Contractors Site Awards and also the Grand Award of Outstanding Exhibit in the Hong Kong Flower Show 2011. Yet there is no place for complacency on our achievements and there is also no doubt that we will continue with our efforts.

In 2012, we will remain devoted to maintaining a sustainable environment and will undertake more green measures and initiatives. With the concerted efforts of my colleagues, we strive to make our community a serene and lovely place to live in.

A stylized, handwritten signature in blue ink, consisting of a large 'L' and 'A' followed by a long horizontal stroke.

K.K. LAU
Director of Highways
11 July 2012

About Highways Department

The Highways Department is responsible for :

- implementation of highway projects in the Public Works Programme;
- maintenance of public roads, including road furniture, road drainage and roadside slopes, and co-ordination and control of utility openings on public roads;
- planning, monitoring and coordinating various activities associated with implementation of new railway projects;
- providing design input for road lighting, highway structures, roadside slope upgrading and landscape features associated with capital works projects and maintenance works;
- inspecting the safety provision on highway construction sites;
- researching into new materials, techniques and standards; and
- providing engineering, quantity surveying and landscaping technical services.

The Headquarters of Highways Department are located in Ho Man Tin Government Offices, with sub-offices in North Point Government Offices, Cheung Sha Wan Government Offices, Cheung Sha Wan Plaza, Skyline Tower and Nan Fung Commercial Centre in Kowloon Bay. We have an establishment of about 480 professional staff and 1,610 technical/common and general grades staff. We maintain about 2,086 km of roads and 13,247 roadside slopes within the territory. The total operating expenditure for the financial year 2011/12 was HK\$2,253 million.

Vision and Mission

Our Vision

To develop and upkeep the road network as well as to plan and implement railway development to world class standards.

Our Mission

In order to enhance the long term prosperity and improve the living standards of the community, we are committed to:

- expand and improve the road network to meet the growth and change in transport needs, and development requirements;
- maintain the integrity of the road network;
- provide high quality technical support for the planning, design, construction and maintenance of the road network; and
- implement and update the Railway Development Strategy

Environmental Goal

Our environmental goal is to accomplish public works efficiently and with due regard to the environment.

Environmental Policy

We incorporate quality and environmental considerations at all stages of our work in developing and up-keeping the road network as well as planning and implementing the railway system. In so doing, we are committed to:

- delivering high quality services to our community;
- identifying and controlling the environmental aspects at all stages of our work, using resources efficiently, minimising waste and preventing pollution as far as practicable;
- monitoring the performance of our contractors to ensure good quality of works and to prevent or mitigate potential environmental impacts arising from our projects;
- complying with relevant legal and other requirements; and
- sustainable construction with due consideration to balancing environmental, social and economic needs.

We are mindful of opportunities for continual improvement of our services through regular review of our Quality Management System, Management Objectives and Targets.

About this Report

This report covers the period from 1 January to 31 December 2011. It shows the environmental awareness of our work and efforts in supporting the Clean Air Charter, environmental management, research and technology and stakeholder's engagement. Our environmental awards received in 2011, our achievement of environmental objectives and targets for 2011, and environmental targets for 2012 are also included in this report.

To reduce paper consumption, this report is published in CD-Rom format and uploaded to our web site.

Clean Air Charter

The Government has signed the Clean Air Charter launched by the Hong Kong General Chamber of Commerce and the Business Coalition. Highways Department is committed to improve air quality by adopting energy saving and emission reducing measures for implementation of the principles and spirit of the Charter.



ENERGY SAVING MEASURES

In our operations, most of the energy consumed is related to public lighting and office use. To take forward our commitments under the Charter, we have implemented energy saving measures in these operations in order to help reduce the emission of pollutant from energy generation.

Energy Saving in Public Lighting

To enhance energy saving in public lighting, we have been replacing electromagnetic ballasts by electronic ballasts for road lights.

With more use of electronic ballasts, the territory-wide public lighting electricity consumption reduced to 134,146,918 kWh in 2011, being 2,282,519 kWh (1.67%) lower than the consumption in 2010. The corresponding reduction in indirect emission was 4,360 kg of sulphur dioxide (SO₂), 2,648 kg of nitrogen oxides (NO_x) and 137 kg of respirable suspended particulates (RSP).

In parallel, we are looking for further enhancement opportunities through conducting trials on the uses of:-

- ❖ Non-illuminated Retro-reflective Traffic Bollards;
- ❖ Ceramic Discharge Metal Halide (CDM) lamps;
- ❖ LED lanterns for low and medium intensity road lights and LED light tubes.

Various trials of the above energy saving measures are expected to complete progressively in the coming two years.



Non-illuminated Retro-reflective Traffic Bollard



LED road lights

Energy Saving in Office

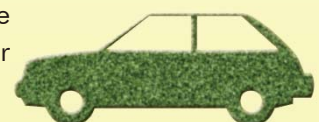
The following measures have been promulgated to enhance energy saving in offices:

- ❖ Appoint Energy Wardens in every office/division to monitor the usage of light and to keep the lumination level to acceptable minimum level.
- ❖ Review the lumination level arising from the change of room use.
- ❖ Maintain air-conditioning not lower than 25.5°C in hot seasons.
- ❖ Switch off lights during lunch or when staff are away for long hours.
- ❖ Switch off computer equipment and electric appliances when not in use.
- ❖ Encourage the use of staircase for inter-floor traffic.
- ❖ Monitor the electricity consumption of different floors by individual meters installed on each floor of Ho Man Tin Government Office.



EMISSION REDUCING MEASURES

Measures have been adopted in our contracts to reduce air emission of vehicles, including the introduction of environmentally-friendly contract vehicles. We have adopted environmentally-friendly contract vehicles approved by Environmental Protection Department extensively in our term contracts. Furthermore, procurement of this type of car for all saloon type contract vehicles had been made as a requirement for all new major works contracts commenced in 2011.



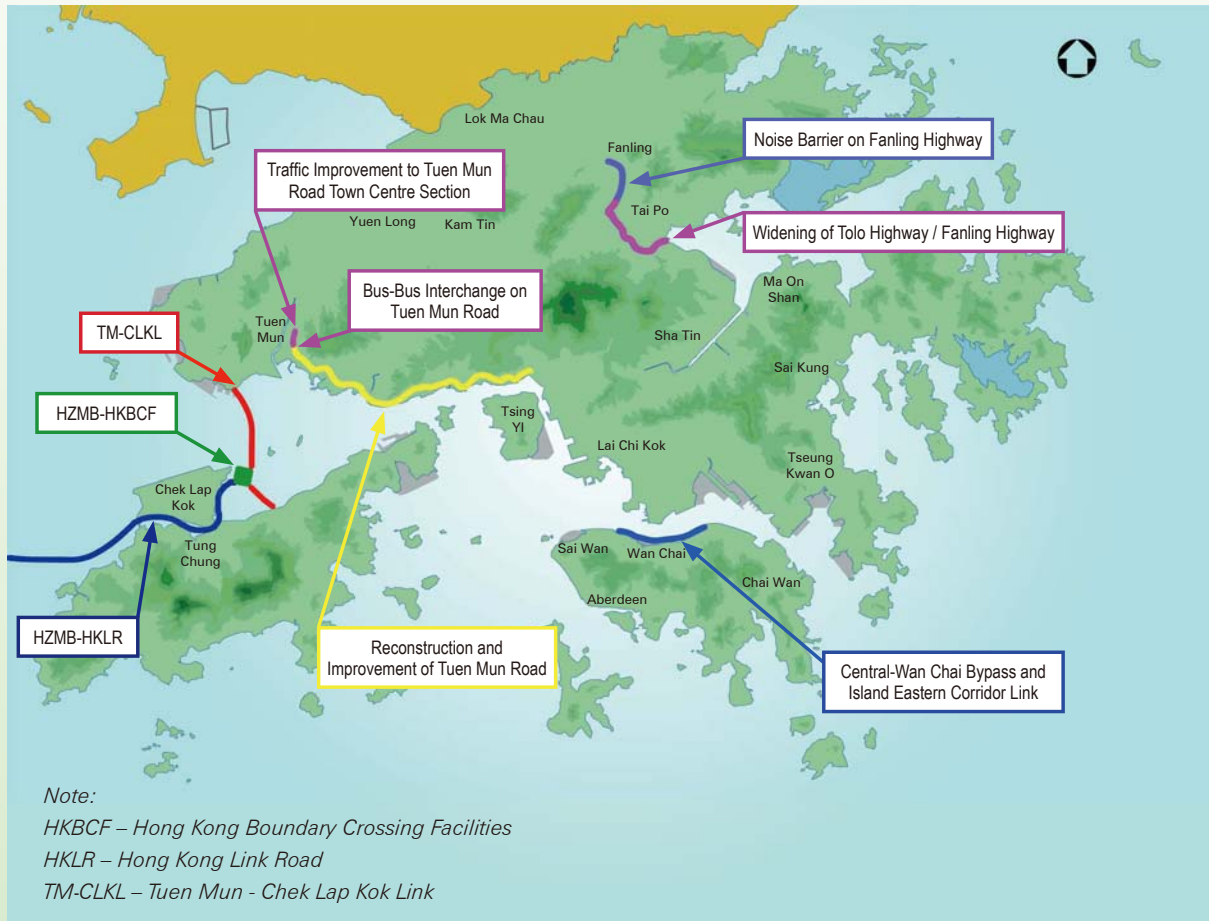
Environmental Management

Highways Department adopts an Environmental Management System accredited to ISO 14001 standard since 2003. The spirit of this system extends to the operations of the department and supports our environmental management on different aspects such as highway project management, railway project management, asset management such as the management on tree risk, as well as office management.



Environmental Management in Highway Project

Highway projects are implemented by the Works Division, the Major Works Project Management Office (MWPMO) and the Hong Kong – Zhuhai – Macao Bridge Hong Kong Project Management Office (HZMB-HKPMO) of Highways Department. Some of the major highway projects in Hong Kong are shown in the diagram below.



Alignments / Locations of major highway projects

In order to prevent or mitigate potential environmental impact arising from the construction, we monitor the environmental performance of our contractors through the following measures:-

- Regular environmental walks jointly conducted by contractor and the Engineer’s Representative
- Regular inspections and monitoring by the Environmental Team and the Independent Environmental Checker required for designated projects under the Environmental Impact Assessment Ordinance
- Monthly Site Safety and Environmental Management Committee Meeting chaired by the Engineer’s Representative
- Regular environmental inspections by our project officers

Besides typical environmental measures, special environmental measures have been designed and adopted to cater for challenges faced by a particular project.

Typical Environmental Measures taken in Construction Sites

Dust Control



On-site automated wheel washing facility



Tarpaulin sheet on exposed slope to prevent dust generation



Dust enclosure for grouting station



Exhaust air dust bag for grouting station



Water spraying system along site hoarding for dust suppression

Noise Mitigation

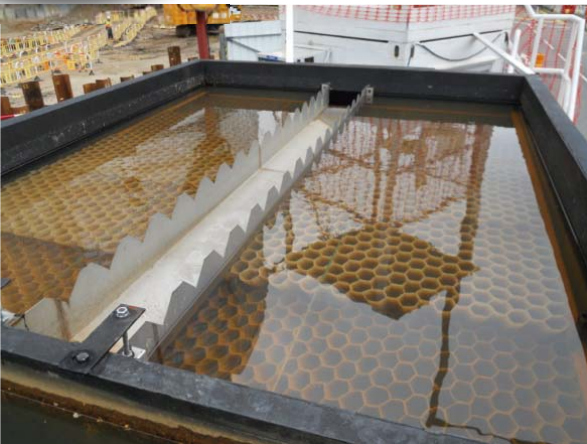


Drilling rigs covered with tarpaulin sheets



Movable noise barrier

Wastewater Management



On-site wastewater treatment facility



Waste Management



On-site sorting of waste timber for recycling



Re-use of damaged water-filled barriers as flower pots

Waste Management



Recycle bins

Sustainable Energy



Wind turbines for electricity generation



Green roof of site office



Solar panels for water heater in site office

Tree Preservation



Tree transplanting with wire mesh net for rootball protection



Retained trees are fenced off

Special Environmental Measure for Marine Sediment in Central-Wan Chai Bypass and Island Eastern Corridor Link Project

The Central-Wan Chai Bypass and Island Eastern Corridor Link (CWB) Project consists of the construction of a 4.5 km dual three-lane trunk road with a 3.7 km long tunnel. It will link up the Rumsey Street Flyover at Central with the Island Eastern Corridor in North Point. The construction works commenced in end 2009 for commissioning of CWB in 2017.

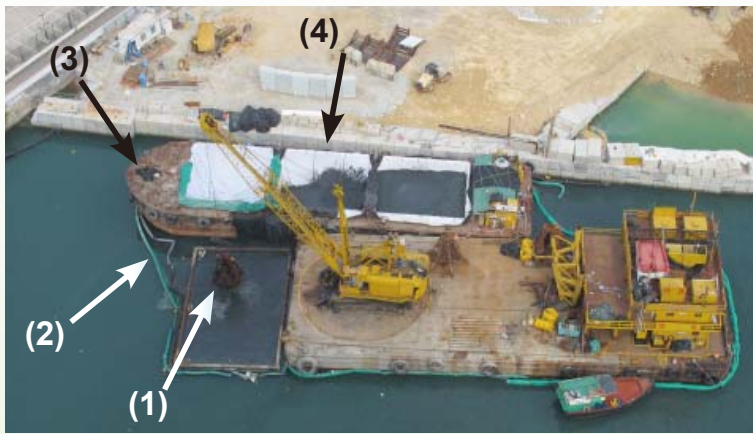


Alignment of Central-Wan Chai Bypass and Island Eastern Corridor Link

The Environmental Impact Assessment (EIA) study of the project was completed in 2007. The study revealed that the water quality in Causeway Bay Typhoon Shelter (CBTS) was polluted due to presence of contaminated sediments deposited on seabed and the sediments at certain locations of CBTS contained high concentration of organic matter and heavy metals. Release of these pollutants might cause algal bloom, which is hazardous to marine life and human health. As such, the management of dredged sediments at CBTS arising from the temporary reclamation works for the CWB tunnel construction has been identified as one of the key issues in the EIA study. Proper management of the dredged sediments is therefore required to eliminate the above potential hazards and to improve the water quality of CBTS.

Last year, about 7000m³ of highly contaminated sediments were dredged from CBTS seabed and disposed of at the designated dumping site. To minimize the environmental impact due to dredging and dumping activities, the following mitigation measures were implemented on site:

1. Use of closed grab for dredging of sediments;
2. Use of silt curtains and impermeable barriers to confine the dredging area and prevent dispersion of dredged sediments;
3. Use of modified hopper barge with 3 compartments housing discrete geosynthetic containers;
4. Use of non-biodegradable geosynthetic container with high tensile strength to securely contain the dredged sediments for disposal;



- (1) Crane with closed grab
- (2) Silt curtains and impermeable barriers
- (3) Modified hooper barge
- (4) Geosynthetic container

Dredging Operation at Causeway Bay Typhoon Shelter

5. Use of deodourising agent to minimize odour nuisance during dredging of sediments;
6. Place PVC sphere in geosynthetic containers to detect any rupture of the containers during disposal;



Spraying of Deodourising Agent



PVC Spheres (Green colour)

7. Fill up the geosynthetic container with sediments and then secure the container by stitching with continuous seam;
8. Wrap and tighten the seam by discrete nylon knots to enhance the sealing effect;



- (a) Continuous seam
- (b) Nylon knot



Sealed Geosynthetic Container

9. Transport the sealed geosynthetic container by barge and dispose it at designated dumping site;
10. Closely track and monitor the movement of barge and dumping operation by real time tracing equipment installed on the barge; and
11. Monitor the water quality at both upstream and downstream of the disposal location by the water quality monitoring station established by an independent environmental team.

Development of Environmentally Friendly Railway System

Railway is a safe, efficient and environmentally friendly mass public transportation carrier. The Government policy places emphasis on railway development as the backbone of public transport. Highways Department adheres to this policy and aim at planning and implementing the railway system to world-class standards.

Overview of Railway Development

The “Railway Development Strategy 2000” published in 2000 provided a blueprint for the next phase of railway development which included a number of new railway schemes to meet Hong Kong’s increasing transport needs in a sustainable manner. Less reliance on road-based transport will alleviate the pressure on transport systems, reduce overall tailpipe emission from vehicles and, in turn, lessen the impact on the environment.

Eight new railway lines, or extensions of existing lines, were commissioned between 2002 and 2009. The West Island Line and the Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link were in full steam construction in 2011. The Kwun Tong Line Extension and the South Island Line (East) commenced construction in mid-2011. The Shatin to Central Link remained in the design phase in 2011 but has recently commenced construction.

The Railway Development Office of Highways Department started a consultancy study in March 2011 to review and update the “Railway Development Strategy 2000”. Based on the “Railway Development Strategy 2000”, this study would review and update the railway development plan taking account of the latest development of the community and changes in planning factors. The study, which will take a period of about two years to complete, aims at updating the railway development strategy to meet the transport demands for railways up to 2031.



Alignments of railway lines

Carefully Designed Noise Control Measures for Construction of the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link

In a total length of 26km, the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) passes through areas with diverging noise features ranging from urban area in West Kowloon to rural area in Mai Po. Construction of the project commenced in January 2010 for completion in 2015.

With its alignment passing through rural areas like Mai Po which features a quiet ambient environment, the project team has committed to ensuring that the construction is carried out with minimum noise impact to the surroundings. At the Mai Po Works Area which neighbours the Mai Po Village, tunnelling work with the use of Tunnel Boring Machine and mucking out of excavated materials are being carried out. In order to minimise the noise impact, the location of site offices and storage containers have been designed carefully and positioned in such a way to serve as noise barrier for protecting the noise sensitive receivers at Mai Po Village. To further enhance the noise mitigation effect, noise absorption material is applied to the storage containers.



Overview of XRL Mai Po Works Area



Double layer containers strategically positioned to serve as noise barrier



Noise absorption material applied to the container for maximum noise mitigation

Apart from the installation of hardware mitigation measures, good site control also plays a vital part in noise control. Front-line staff members have been trained to exercise good site control measure by maintaining the stability of muck container during the muck out process. Also, the Environmental Team closely monitors the level of construction noise.

Tree Risk Management

Horticultural inspectors under maintenance term contracts regularly inspect all trees maintained by Highways Department at least once every six months. Appropriate maintenance operations such as pruning and pest control are carried out accordingly to encourage healthy growth of trees.

For those trees with identified potential hazard, we arrange tree specialists to conduct further examination by carrying out individual tree risk assessment in accordance with the guideline promulgated by the Tree Management Office and give advice on suitable mitigation measures.

We are the first works department to procure electronic equipment to analyze internal wood condition of a tree. Trained staff members in our Landscape Unit have been using these equipment to analyze the structural integrity of potentially hazardous trees since 2009. The data obtained has proved to be very valuable during the decision making process in drawing a balance between public safety and tree preservation. Besides, this also enables us in achieving the departmental objective of creating a safe, green and pleasant road network.



Tomographic testing in progress



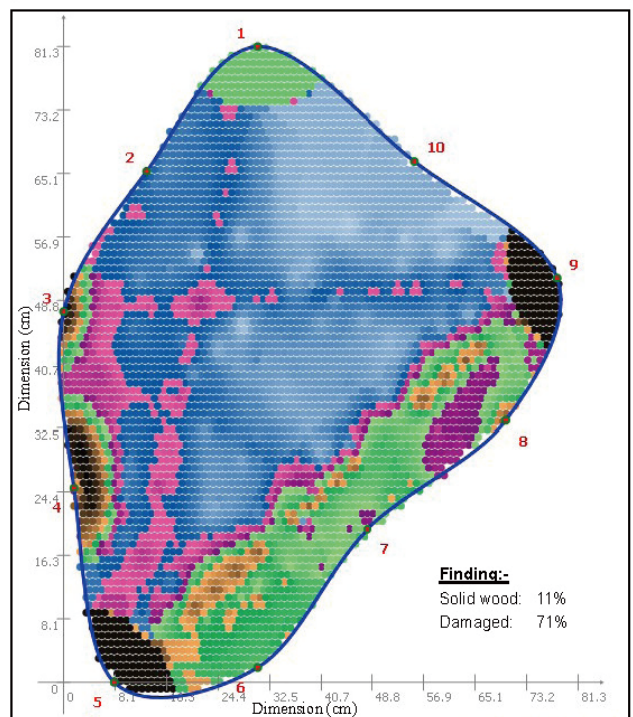
LEGEND

Relative Velocity:-

100% —————> 16%

(Solid wood)

(Damaged)



Tomographic result of a tree section

Green Office Management

In support of the administration's drive to save natural resources, we are committed to making every endeavor to make our green office management a greater success. In addition to energy saving, we have also been making our best effort to save other resources.

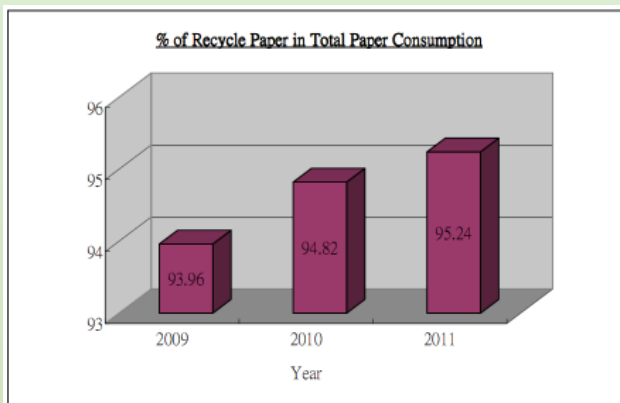
Resources Saving

Paper Saving

To align with the green office initiative, Highways Department have promulgated and would continue with the following measures on paper saving –

- ❖ Minimise photocopying paper consumption.
- ❖ Use both sides of paper for printing and photocopying.
- ❖ Use blank side of used paper for drafting/photocopying for internal document/correspondences/fax documents.
- ❖ Use electronic means extensively for communication (for instance, use electronic files and keep the use of hard copies to minimum).
- ❖ Reuse envelopes and files covers.
- ❖ Encourage the use of recycled paper.

In 2011, we consumed 20,357 reams of paper (representing an increase of about 6% of that of 2010) of which 95.24% were recycled paper. The increase in paper consumption was mainly attributable to the accelerated implementation of railway projects and its associated construction contracts. In 2011, 86 railway construction contracts under 5 railway projects were under way, which was a drastic increase as compared with 39 railway construction contracts under 2 railway projects in 2010.



An increasing trend of using recycled paper in total paper consumption



Recycling Boxes in Ho Man Tin Government Office

Waste Recycling

We treasure waste with recycle value by taking the following measures over the years –

- ❖ Putting up green boxes to collect reusable envelopes and papers;
- ❖ Collecting computer printer toners and ink cartridges for refilling and recycling;
- ❖ Putting up recycling boxes to collect used paper, CDs, plastic bottles, aluminum cans and rechargeable batteries for recycling.

Water Saving

In 2011, we continued to carry out the toilet renovation project in Ho Man Tin Government Office (HMTGO). To maximize water conservation, we have adopted the use of dual-flush toilets, automatic low flow water taps and sensor type urinals. These new components can effectively control the duration of water flow and also keep the water flow at low level. We target to complete the project by 2012.



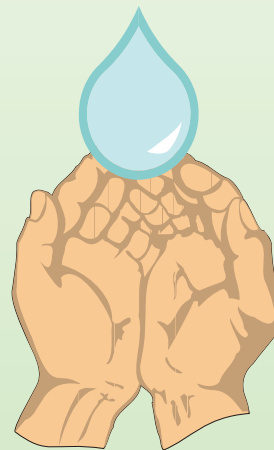
Dual-flush toilet



Low flow water taps



Sensor type urinal



Auditing and Certification

Annual Environmental Audit

We conduct annual environmental audits in all 15 offices located in different premises with a view to maintaining the impetus of green measures in housekeeping. The objectives of conducting annual environmental audits are:

- (i) to assess compliance with the green housekeeping guidelines;
- (ii) to identify non-compliance and recommend remedial actions;
- (iii) to promote good environmental management; and
- (iv) to increase staff awareness of green management and occupational safety and health initiatives.

Our offices have striven to comply with the green housekeeping guidelines. We have also taken the opportunity to share among the offices the green management best practices.

Carbon Audit

Two carbon audits were conducted for HMTGO by the Building Management Office (BMO) in 2011 to monitor the effectiveness of Green House Gas reduction efforts. The relevant data are being studied by the BMO.



Carbon Audit Logo

Energy Audit

To upkeep our effort in energy saving, an Energy Audit for HMTGO was conducted by Government Property Agency with three energy management opportunities identified:

1. Replacement of the T8 fluorescent lighting fittings with T5 ones in areas which have not been covered yet;
2. Installation of motion sensors in carparking areas so that lighting would be switched off when no motion is detected; and
3. Replacement of the existing fluorescent lighting fixtures by dual lights fixtures complete with motion sensors in staircases.

The Government Property Agency and the Architectural Services Department have been working on the cost estimation and resource allocation for the improvement works. We shall continue to work on accomplishing the energy management opportunities.



T5 fluorescent lighting



Motion sensor

Indoor Air Quality Certification

The indoor air quality of HMTGO has fully complied with the Good Class of the Indoor Air Quality Objectives since 2003.



Research and Technology

Highways Department continues to focus researches on environmentally friendly technology, such as incorporating recycled materials into our road pavements and street furniture, as well as reducing noise generation from works.



Paving Blocks with Recycled Glass



Synthetic Gully Gratings



Thermal Patcher



Recycled Asphalt Pavement

Recycled Asphalt Pavement

To enhance the use of Recycled Asphalt Pavement (RAP), Highways Department has stipulated the mandatory use of 10% to 15% RAP in bituminous materials in road maintenance contract since 2008. To further utilize RAP, research studies for bituminous material with 30% RAP have been carried out and the use of the material has been identified to be viable. Site trials using 30% RAP have been conducted and the performance of the pavements is satisfactory. In the light of the above, we have increased the RAP amount in wearing course and base course up to 30% in two new road maintenance contracts commenced in April 2012.

Paving Blocks with Recycled Glass

With the success in the site trials and the support of the Development Bureau and Environment Bureau, concrete paving blocks with recycled glass have been used in road maintenance contracts. Recycled glass cullet is used as recycled fine aggregates in the paving blocks and constitutes 20% to 25% by weight of the total aggregates. The performance of concrete paving blocks with recycled glass is satisfactory and is similar to that of the conventional concrete paving blocks.

Synthetic Gully Gratings

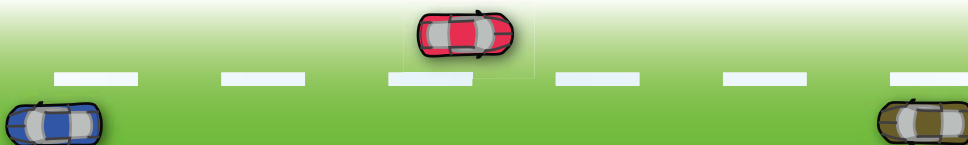
The synthetic gully grating is composed of recycled materials and its manufacturing process does not induce air pollution. After the successful site trial of synthetic gully grating, this material has been incorporated into the road maintenance contracts commenced in April 2011 as an alternative option to traditional cast iron grating, while its long term durability will continue to be observed.

Hot-in-place Recycling by Thermal Patcher

Thermal patcher is a truck-mounted plant for heating up and softening the existing asphalt in defective area using infra-red radiation. The softened asphalt is then compacted with additional virgin asphalt to create a seamless reinstatement. Its application has been stipulated in all the road maintenance contracts of Highways Department since 2009 for minor asphalt pavement repair works up to 2.5m².

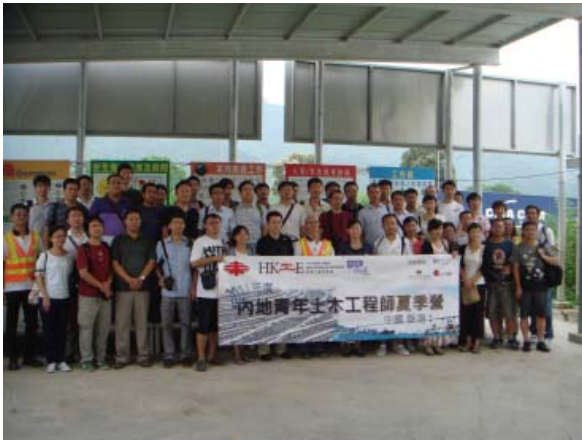
In order to further explore wider applicability of hot-in-place recycling on pavement preservation, a series of the field trials on larger size thermal patcher was conducted in 2010 to confirm the effectiveness of its application under local working conditions, particularly on road sections subjecting to stringent environmental and traffic constraints. Based on the field observations during the trial and the in-service performance monitoring, it is found that the larger size thermal patcher was a feasible engineering option for executing small scale resurfacing works of area up to 100m². The quality of the finished works is comparable to that accomplished by traditional resurfacing method. This method recycles the existing asphalt, which significantly reduces the use of new asphalt as compared with the conventional resurfacing method with less construction noise generated from the works.

The use of hot-in-place recycling in larger scale has been included in the road maintenance contracts of Highways Department since 2011 as an additional option for pavement preservation works. In view of its high cost, its application is mainly for repairing deteriorated pavements less than 100m² on busy road sections close to noise sensitive areas where temporary lane closure for works are only allowed on public holidays or at night due to traffic consideration.



Stakeholders Engagement

Highways Department always strives for improvement on services through engagement with internal and external stakeholders, such as our staff, the industry and the general public.



Our Staff

In 2011, Highways Department organized various training courses to acquaint our staff members with sufficient environmental knowledge for handling their duties. For new comers, awareness course in Environmental Management System (EMS) was organized which aimed at providing them the basic knowledge in ISO 14001 EMS and facilitating them to understand the principle and operation of the EMS in the department.

In order to maintain the EMS, internal audit on the system was organized annually. An ISO 14001:2004 EMS Internal Auditor training course was conducted to equip our staff to serve as internal auditors with the necessary auditing knowledge and skills in carrying out internal audit.



For frontline staff members of professional and technical grades involving in environmental monitoring, relevant training was provided to them so that they could have a deeper understanding of the environmental checking requirements under our EMS. The training course covered latest changes in handling and reporting of identified non-compliance with legal requirements.

We continued to provide training for staff members who were required to use the computer software "RoadNoise 2000" for the assessment of road traffic noise and design of noise barrier. The training included requirement of Environmental Protection Department on noise assessment method and also hands-on experience of using the software.

Course Name	Date	No. of Participant
Awareness Course to ISO14001 EMS	May & Jun 2011	264
ISO14001: 2004 EMS Internal Auditor Training	Jul 2011	16
Environmental Monitoring / Measurement Procedures & Environmental Requirements for Technical Staff Training	3, 11-13, 18 Oct 2011	98
Environmental Monitoring / Measurement Procedures & Environmental Requirements for Professional Staff	4, 6, 10 Oct 2011	37
Training on "RoadNoise 2000"	25 Mar 2011	22

The Industry

Joint Safety, Health and Environmental Seminar 2011

To enhance our staff's knowledge on environmental management measures, we continued to co-organize the Joint Safety, Health and Environmental Seminar 2011 with CLP Power Hong Kong Limited, Civil Engineering and Development Department and Environmental Protection Department. The aim of the seminar was to enhance the knowledge of environmental management measures for the professional and technical staff.



Delivering the talk of pavement rehabilitation by hot-in-place recycling



Co-organizing Joint Safety, Health and Environmental Seminar 2011

Environmental Promotion Campaign in Construction Site

Contractors were encouraged to organize and participate in various environmental promotional activities, which included display of environmental messages on sites, organizing talks and campaigns, distribution of newsletters, awarding staff of their good performance on environmental management, and joining environmental campaigns and competitions launched by other organizations, etc.

Our contractors actively participated in the Hong Kong Awards for Environmental Excellence (HKAEE) which was led by the Environmental Campaign Committee alongside the Environmental Protection Department and in conjunction with other organizations. Our contractors were encouraged to adopt green management and green innovations. HKAEE benchmarked their commitment towards environmental excellence.

Our contractors applied for Environmental Labels or Sectoral Awards under HKAEE. The Environmental Labels consisted of Wastewi\$e and Energywi\$e Labels. The Labels demonstrated that the contractors have effectively adopted measures to reduce the amount of waste generated and save energy within their establishments respectively, and recognized the waste reduction and energy saving effort of the contractors. The Sectoral Awards encouraged our contractors to adopt green management; benchmarked their commitments towards best practices within construction industry; and acknowledged their efforts of leading the construction industry.



HKAEE Logo

Sharing Workshop on Reduction of Noise Disturbance

A half-day sharing workshop on reduction of noise disturbance jointly organized by Highways Department and Environmental Protection Department was held on 2 November 2011. Around two hundred staff members of professional and technical grades as well as their contractor representatives from Highways Department and other four major government departments namely Civil Engineering and Development Department, Water Supplies Department, Drainage Services Department and Environmental Protection Department attended the workshop. The workshop aimed to provide the attendees an understanding of various means to minimize noise disturbance arisen from road works. In this regard, the principles of processing the Construction Noise Permit (CNP) application under the Noise Control Ordinance (NCO), and the Emergency Excavation Permit (EXP) application under Land (Miscellaneous Provisions) Ordinance (LMPO) were introduced. We also shared some good practices to reduce noise disturbance by examples of better works arrangement and use of thermo patcher. There was fruitful discussion during the panel discussion session, and attendees shared their valuable experience on the subject.

The Public

Customer Satisfaction Measurement 2011

In order to provide input to the department as a whole in identifying service improvement areas and devising future communication strategies including environmentally related aspects, a bi-annual exercise known as Customer Satisfaction Measurement 2011 was conducted to measure the degree of satisfaction among the public towards the services provided by the department.

The Customer Satisfaction Measurement 2011 consisted of a market research in the form of telephone survey and a customer liaison group for collecting customer feedback on pledge items in a qualitative approach.

The fieldwork of the telephone survey and the focus group meetings of the customer liaison groups were successfully completed in December 2011 and February 2012 respectively. The general public is quite satisfied with our pledge to protect the environment with 76% of the respondents grading "quite / very satisfied" in this aspect. The results and recommendations of the exercise are being deliberated by the department for continual improvement to our services.



The Customer Satisfaction Measurement 2011

Project-based Activities

Highways Department publicizes the project details to the public, explains the justifications of the projects, compares different design options, and collects public's opinion for continuous improvement through various means.

Production of Short Videos and Posting in Internet

YouTube Hong Kong-Zhuhai-Macau Bridge (HZMB)

搜尋結果：Hong Kong-Zhuhai-Macau Bridge (HZMB)

您的意思是：Hong Kong-Zhuhai-Macau Bridge (HZMB)

- Hong Kong-Zhuhai-Macau Bridge (HZMB) - PL... 觀看次數：487
- Hong Kong-Zhuhai-Macau Bridge (HZMB) - C... 觀看次數：211
- Hong Kong-Zhuhai-Macau Bridge (HZMB) - E... 觀看次數：87
- Hong Kong-Zhuhai-Macau Bridge (HZMB) - N... 觀看次數：118
- Hong Kong-Zhuhai-Macau Bridge (HZMB) - LI... 觀看次數：82



Designated Websites

港珠澳大橋香港本地工程
Hong Kong-Zhuhai-Macao Bridge Related Hong Kong Projects

English 繁體版 简体版
海天之間 建您想
Dream beyond the Horizon

路政署
Highways Department

中九龍幹線及加士居道行車天橋擴闊工程
Central Kowloon Route and Widening of Gascoigne Road Flyover

交通改善
環境共建
Better Traffic
Better Environment

Skip

English 繁體版 简体版 Text Only 繁體純文字 简体純文字

Environmental Performance

Highways Department set clear objectives and targets in our environmental management plan every year. We are pleased to conclude that most of our targets for 2011 were satisfactorily met.



Awards

Outstanding Environmental Management and Performance Award (OEMPA) and Considerate Contractors Site Award (CCSA)

Development Bureau organized the Considerate Contractors Site Awards (CCSA) Scheme to recognize construction sites with good site safety and environmental performance and considerate attitude towards the neighbourhood and the public. In 2011, our construction sites received six CCSA and three OEMPA, including two Silver Prizes from CCSA, and one Silver and one Bronze Prizes from OEMPA.



Display boards for Contract number HY/2007/10 "Reconstruction and Improvement of Tuen Mun Road – Tai Lam Section", winner of CCSA (New Works) and OEMPA silver prizes



Display board for Contract number HY/2008/11 "Reconstruction and Improvement of Tuen Mun Road – Sam Shing Hui Section", winner of OEMPA bronze prize



Display board for Contract number 20/HY/2004 "Highways Department Term Management Contract (Maintenance of High Speed Roads in New Territories East and Hong Kong Island 2005-2013)", winner of CCSA(RMAA Works) silver prize

Hong Kong Flower Show 2011

Highways Department actively participates in Hong Kong Flower Show every year to promote the works of the department. It is a great opportunity to raise public awareness on our goal of 'Enhancing the Highway Environment' by incorporating greening in our daily works. In 2011, our design concept was 'Highways in Symphony of Spring Flowers' and we were honoured to receive 'Grand Award of Outstanding Exhibit' for our display.

In order to let visitors to appreciate our sustainable approach in development of new roads and up-keeping of existing highway facilities, green corridor, footbridge with flowering plants and other environmentally friendly materials such as paving blocks with recycled aggregates etc. were adopted in the display. To echo with the theme of the Flower Show 2011, 'Symphony of Spring Flowers', panels with climbing plants in the form of musical notes were also constructed to act as noise barriers to provide a peaceful and serene environment for visitors to enjoy the sounds of nature.



The theme – "Symphony of Spring Flowers"

Achievement of Environmental Objectives and Targets

Objectives	Targets set for 2011	Achievement
Reducing the energy consumption in public lighting	<ul style="list-style-type: none"> (i) To install 2,500 electronic ballasts for road lighting territory wise; (ii) to continue the trial use of 400 LED light tubes in footbridge / subways; and (iii) to complete the further trial installation of 400 nos. of non-illuminated retro-reflective traffic bollards (NRTB). 	<ul style="list-style-type: none"> (i) 1,436 nos. of electronic ballasts were installed in 2011. The rest were installed before March 2012. (ii) Target achieved; 432 nos. of LED light tubes in footbridge / subways were installed in 2011. (iii) 100 nos. of NRTB were installed in 2011. The rest would be installed by June 2012.
Saving 5% electricity consumption in HMTGO by 2014 (comparing with the baseline electricity consumption in 2009)	<ul style="list-style-type: none"> (a) To install 10 sets of motion sensors in carparking area; and (b) to replacing 60 nos. of fluorescent lighting by dual lighting fittings with motion sensors in staircases. 	Installation works would be carried out upon completion of cost estimation and resources allocation being undertaken by the Government Property Agency and the Architectural Services Department

Objectives	Targets set for 2011	Achievement
Adopting measures in water conservation	To continue installing dual-flush toilets, automatic low flow water taps and sensor type urinals in the toilets of HMTGO when they are refurbished (for toilets with refurbishment works completed in 2011)	Target achieved; Dual-flush toilets, automatic low flow water taps and sensor type urinals have been installed in the toilets with refurbishment works completed in 2011.
Improving indoor air quality	To continue upkeeping the indoor air quality at or above the level of "Good Class" in HMTGO	Target achieved; The indoor air quality of HMTGO was maintained as "Good Class" in 2011.
Carrying out carbon audit for tracking the effectiveness of Green House Gas (GHG) reduction	To continue carrying out carbon audit twice per year at HMTGO for tracking the effectiveness of GHG reduction efforts	Target achieved; Two carbon audits were arranged by Building Management Office of Ho Man Tin Government Office.
Encourage the use of recycled paper in the department	To raise the percentage usage of recycle paper from 94% to 95% of the total consumption	Target achieved; The percentage of recycled paper consumed was 95.24% of the total paper consumption in 2011.
Setting target in reducing photocopying paper consumption	To maintain the consumption of photocopying paper at a level not exceeding the average consumption level for the past two years	20,357 reams of paper were consumed in 2011, which was 4.1% more than the target due to the launching of new contracts and expediting of projects development.
Recycling materials	<p>(i) To introduce the use of reclaimed asphalt pavement (RAP) in bituminous pavement construction in more contracts and use of higher RAP contents progressively; and</p> <p>(ii) to introduce the use of thermal patcher for small-scale resurfacing in the new road maintenance contract commencing in April 2011</p>	<p>(i) Target achieved; Use of RAP has been specified in two new road maintenance contracts scheduled to commence in April 2012 and the content of RAP by total weight in the bituminous materials is increased to a level ranging 20% - 30%.</p> <p>(ii) Target achieved; The use of thermal patcher for small-scale surfacing has been introduced in the new road maintenance contract commenced in April 2011.</p>
Planting trees and shrubs	To plant 150,000 trees/shrubs in the vicinity of highway projects	Target achieved; 176,532 trees/shrubs were planted.
Adopting site office equipment with energy saving label	To use site office equipment with energy saving labels in all new major works contracts	Target achieved; All 4 new major works contracts commenced in 2011 have adopted energy saving site office equipment.
Procuring environmentally friendly contract vehicle	To procure environmentally friendly private car model approved by EPD for saloon type contract vehicle in each of the new major works contracts	Target achieved; All 4 new major works contracts commenced in 2011 have procured environmentally friendly private car model approved by EPD for saloon type contract vehicle.
Reducing dust emission	To include a particular specification clause for dust suppression in all new major works contracts	Target achieved; All 4 new major works contracts commenced in 2011 have included the dust suppression particular specification.

Looking Ahead

With the encouraging results achieved in 2011, we look forward to more research initiatives and green measures in 2012 for the protection of the environment.



Environmental Objectives and Targets for 2012

We always strive for continual improvement and will continue in 2012 to maintain a sustainable environment. We will make every endeavour to achieve the targets set below:-

Objectives	Targets
Reducing the energy consumption in public lighting	To install 2,000 electronic ballasts for road lighting territory wise (the outstanding items in 2011 target are excluded)
Saving 5% electricity consumption in HMTGO by 2014 (Comparing with the baseline electricity consumption in 2009)	As the target for 2011 has not been achieved, we shall continue to work with Government Property Agency and Architectural Services Department for: (a) Install 10 sets of motion sensors in carparking area; and (b) Replacing 60 nos. of fluorescent lighting by dual lighting fittings with motion sensors in staircases.
Adopting measures in water conservation	To continue installing dual-flush toilets, automatic low flow water taps and sensor type urinals in the toilets of HMTGO when they are refurbished (for toilets with refurbishment works to be completed in 2012)
Improving indoor air quality	To continue upkeeping the indoor air quality at or above the level of "Good Class" in HMTGO
Carrying out carbon audit for tracking the effectiveness of Green House Gas (GHG) reduction	To continue carrying out carbon audit twice per year for tracking the effectiveness of GHG reduction
Encourage the use of recycled paper in the department	To raise the percentage usage of recycle paper from 95% to 96% of the total consumption
Setting target in reducing photocopying paper consumption	To maintain the consumption of photocopying paper at a level not exceeding the consumption level of 2011
Promoting the wider use of recycled materials	(a) To introduce the use of reclaimed asphalt pavement (RAP) in bituminous pavement construction in more contracts progressively; and (b) to introduce the use of synthetic channel grating consisting of non-metallic recycled materials in the new road maintenance contracts
Planting trees and shrubs	To plant 156,000 trees/shrubs in capital works contracts
Adopting site office equipment with energy saving label	To use site office equipment with energy saving labels in all new major works contracts
Procuring environmentally friendly contract vehicle	To procure environmentally friendly private car model approved by EPD for saloon type contract vehicle in each of the new major works contracts
Reducing dust emission	To include a particular specification clause for dust suppression in all new major works contracts
Adopting energy efficient features and renewable energy technologies	(a) To adopt energy efficient features and renewable energy technologies in all capital works projects of MWPMO and HZMB-HKPMO with consultancy agreement tendered during the calendar year of 2012; and (b) to conduct carbon audit to assess the carbon footprint of the road projects of MWPMO and HZMB-HKPMO during feasibility and design stages with a view to providing recommendations for appropriate compensatory / mediation measures.
Green Roof and Green Wall at the Engineer's Site Office	To include a particular specification clause for construction of Green Roof and Green Wall at the Engineer's Site Office which is exposed in sunlight in selected capital works contracts of MWPMO and HZMB-HKPMO tendered during the calendar year of 2012.

Hoping that this report could provide you with a glimpse of our dedication and efforts in environmental protection. Should you have any comment to our work, please share with us your views through our homepage on the Internet (address: <http://www.hyd.gov.hk>). Thank you for reading this publication.

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