

Environmental Report 2019



Education Bureau

Environmental Report 2019

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Foreword

Maintaining an environmentally friendly surrounding is crucial to the development of our future generations. As a standing policy, we are committed to conserving our environment through various means and delivering our services in an environmentally responsible manner. To take this forward, we undertake to promote environmental education in schools, nurture civic responsibility and an environmentally responsible attitude among our young generation, initiate housekeeping measures to preserve common resources and fully comply with environmental legislation.

The objective of this report is to outline our policies and management measures with respect to environmental issues, our performance in 2019 and our direction for the coming year.



Controlling Officer's Profile of Key Responsibilities

The Education Bureau is responsible for formulating and reviewing education policy and overseeing the effective implementation of education programmes. We are also the School Sponsoring Body for 34 primary schools and 31 secondary schools in Hong Kong.

The Bureau seeks to provide quality education for Hong Kong's students, to develop their potential to the full and to prepare them for challenges in life.

The Bureau had an establishment of 6 146 permanent posts as at 31 December 2019, with offices located in 23 venues throughout Hong Kong. We strive to deliver professional services and ensure effective use of resources.



Environmental Policy

Our environmental policy is to promote environmental education in schools, to maintain a management system to improve the environmental quality of our activities, to adopt responsible environmental housekeeping practices, to enhance our staff's environmental awareness and to comply with relevant legislation and codes of practice.



Key Environmental Performance in 2019

(A) ENVIRONMENTAL EDUCATION

Our mission is to enhance students' environmental awareness through education and enlist their participation in conserving the environment. To take this forward, we adopt a cross-curricular approach in the promotion of environmental education and promote school-based and action-oriented activities.

To fulfill the goal of promoting environmental education, various initiatives have been undertaken. They include –

- ✚ incorporating relevant learning elements in relevant curriculum framework / curriculum guides and other reference materials to promote environmental education in schools;
- ✚ organising in-service teacher professional development activities, including site visits and seminars;
- ✚ producing educational multimedia resources on environmental education;
- ✚ organising school events on environmental education together with various government departments and green groups;
- ✚ organising seminars and providing exemplars to assist schools in planning environmental education programmes; and
- ✚ supporting the “Greening for the Chest” Campaign organised by the Community Chest of Hong Kong.



1. Interaction with Schools

(a) School Inspections and Visits

We conducted eight school visits on General Studies for Primary Curriculum in 2019 giving advice to teachers on the implementation of environmental education. Schools were also encouraged to formulate an environmental school policy and implement measures on energy conservation.

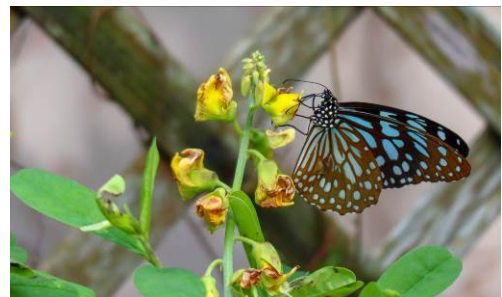
(b) Provision of Resources to Schools

✚ Seven professional development programmes related to environmental education were provided for Liberal Studies teachers. Five of the programmes were held in collaboration with the Environment Bureau and tertiary institutions, covering a range of environmental issues in Hong Kong, such as sustainable development, environmental survey, waste management, mobile learning, and collection and application of scientific data in environmental protection.

✚ Two on-site professional development programmes were held in collaboration with the Agriculture, Fisheries and Conservation Department for Science teachers at the Woodside Biodiversity Education Centre to enrich their knowledge on teaching topics of biodiversity and conservation.



✚ An on-site professional development programme was held for Biology teachers at the Fung Yuen Nature and Culture Education Centre and the Fung Yuen Butterfly Reserve to enrich their knowledge on habitat management, species monitoring, and biodiversity and ecological conservation in Hong Kong.



✚ An on-site professional development programme was held for Biology teachers at the Caritas Chan Chun Ha Field Studies Centre to enrich their knowledge of designing and organising field study activity on plankton biodiversity.

- ✚ A total of six training programmes in the form of seminars and visits on Education for Sustainable Development were organised. Schools' good practices on green school policies, food waste reduction and sustainable consumption of biological resources were disseminated.
- ✚ A total of six outdoor workshops were held at Long Valley Wetland, Sha Lo Tung, Hoi Ha Wan, Tai Sang Wai, Tai Po Town Centre and Ocean Park respectively to promote education for sustainable development and explore with teachers on how to integrate environmental issues into values education.
- ✚ Learning and teaching materials on social issues related to the environment and sustainable development, such as water resources, development of renewable and non-renewable energy and waste management, were provided for Liberal Studies teachers.
- ✚ Three multimedia resources and an interactive game on environmental education / sustainable development were developed and uploaded to the Hong Kong Education City Educational Multimedia Website (<https://www.hkedcity.net/etv>) for all schools in Hong Kong.

(c) School Activities to Promote Environmental Awareness

- ✚ Funding was provided for 260 school visits to the Mai Po Nature Reserve.
- ✚ Student Environmental Protection Ambassador (SEPA) Scheme 2019/20



- ✚ SEPA Scheme was organised in collaboration with the Environmental Protection Department (EPD) and the Environmental Campaign Committee to promote environmental protection in schools. The main theme in 2019/20 was “Waste Reduction and Management” to promote waste reduction at source and to enable students to better understand waste management in Hong Kong and the current policy initiatives.
- ✚ A total of 290 primary and secondary schools participated in the SEPA Scheme 2019/20. As at December 2019, 7 726 Student Environmental Protection Ambassadors (SEPAAs) were appointed to assist teachers in



organising environmental education activities. The SEPAs, schools and families were encouraged to adopt a greener lifestyle and take more positive initiatives in improving the environment. Knowledge on proper waste recycling practices and the sustainable use of biological resources would be introduced to them through a series of environmental training and activities.




Outdoor Education Camp Scheme (OECS)

-  We supported schools in organising OECS, in which enhancing students' awareness of environmental protection was one of the learning elements. Related themes or activities included “Nature and I”, “Science and Ecology Trips”, “Climatology, Geography and Ecology Study Camps”, etc. Some schools also adopted environmental protection as the main theme of the OECS, such as “Green Living” and “Saving Energy”.
-  A total of 75 948 students, including 21 122 secondary and 54 826 primary students from 797 schools (277 secondary and 520 primary schools), participated in the OECS in the 2018/19 school year.




Waste Separation and Recycling Scheme in Schools (WSRSS)

-  Under the Scheme, we worked together with the Environmental Campaign Committee to promote the concept of “4Rs”, i.e. reducing, re-using, recycling and replacing disposable products. As at the end of 2019, the participating schools collected about 277 210 kilogrammes of waste paper, 155 547 kilogrammes of plastic materials and 11 734 kilogrammes of metal containers.



Smart City Project Programme 2018/19

-  The Smart City Project Programme 2018/19 was organised to provide opportunities for students to suggest innovative ways to realise the ideas of Smart City in the development of their home, school, community and city environment as well as to further develop the knowledge and skills on topics of “Climate Change”, “Biodiversity” and “Healthy Lifestyle”. The Programme consisted of a project exhibition under the theme “Smart City”, supplemented by a series of events for students, including induction trips, day camps and study trips.

- A total of 1 311 students from 171 schools (104 secondary schools and 67 primary schools) participated in the Programme in the 2018/19 school year.



2. **Building Partnerships**

We collaborated with various government departments and relevant green groups to promote environmental protection. We participated in the following working group, committees and subcommittee in 2019 to provide advice on the organisation of school activities and production of resources materials to schools –

✚ Environmental and Conservation Fund Committee



✚ Environmental Campaign Committee

✚ Environmental Campaign Committee – Environmental Education & Community Action Projects Vetting Subcommittee



✚ Environmental Campaign Committee – Education Working Group

✚ Hong Kong Green Building Council (HKGBC) – Public Education Committee



✚ World Wild Fund for Nature Hong Kong Education Committee

✚ Management Committee of Lung Fu Shan Environmental Education Centre

(B) GREEN MANAGEMENT FRAMEWORK

To put in place an effective management framework, Principal Assistant Secretary (Administration) has been appointed the Green Manager of the Bureau to oversee environmental protection issues. Under her chairmanship, a cross-divisional Bureau Green Management Working Group with representatives from all divisions set up since 1999 has been overseeing the implementation of green housekeeping programmes. Apart from serving as the focal point for directing and addressing energy and environmental management issues and strengthening green efforts in the Bureau, the Working Group also initiates and monitors the progress of green measures and reviews the overall strategy for green management in the Bureau.

A two-tier Energy Manager Scheme has been introduced to promote and monitor green measures in the Bureau –

1. Green Managers at Divisional Level

Fifteen Energy Managers have been appointed at divisional level to oversee the implementation of energy saving and green measures.

2. Assistant Energy Managers and Green Executives at Sectional Level

Environmental audit and inspection teams with 42 Assistant Energy Managers and 47 Green Executives have been set up at sectional level to perform energy conservation duties and implement green measures, such as conducting regular checks, tendering advice to staff concerned and monitoring energy consumption. They also function as Energy and Emission Management Teams to co-ordinate measures to reduce energy and paper consumption.

Furthermore, electricity consumption of all offices is critically reviewed and closely monitored at the regular Green Management Working Group meetings.



(C) IN-HOUSE HOUSEKEEPING MEASURES

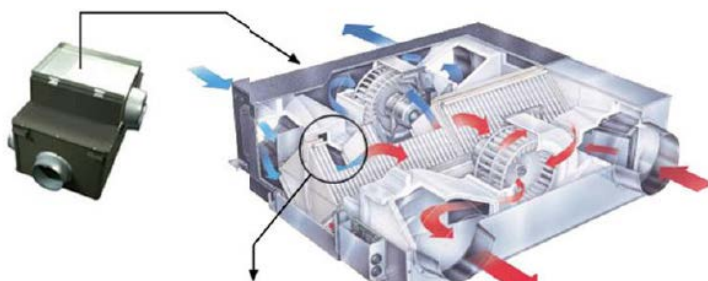
1. Design and Construction Works for New Schools

We introduced various environmentally friendly initiatives in the design and construction works of new school buildings, including –

- reduction in noise, air and water pollution during construction through implementation of mitigation measures;
- use of renewable energy (e.g. photovoltaic system, solar hot water system) and alternative source of water (e.g. rainwater harvesting system) as far as practicable;



- reduction in construction waste by using more precast and prefabricated building elements;
- increased application of re-usable materials, in particular metal framework, site hoarding and recycled products;
- improvement to indoor air quality by installing fresh air pre-conditioners in classrooms and using low volatile organic compound-emitting building materials;



- use of environmentally friendly refrigerant for air-conditioners;

- use of energy saving devices such as sun shading on external elevations, occupancy sensors, photo-sensor controlled lighting, LED general light fittings, LED exit signs, variable refrigerant volume air-conditioning system and fresh air pre-conditioners;



- use of water saving devices such as dual-flush cisterns and sensor-taps for wash basins;



- increased landscaping in school playgrounds and upper levels and roof floor of school (including vertical greening) for a greener environment in schools and campuses;



- provision of varied plant species and designated green areas in schools to foster students' interest in natural science and enable students to develop horticultural skills;



- provision of adequate space and waste separation bins to facilitate separation, collection and storage of recyclable materials for recycling;
- use of shared facilities among schools to enable a greener and more spacious environment in these schools;
- introduction of hygiene improvement measures to schools, including toilet provision without main entrance doors and hand-washing facilities in playgrounds; and
- provision of Central Food Portioning Area to facilitate the use of re-usable cutlery and food containers and to reduce food wastage.



Hybrid type solar energy collector



Hybrid type lamp pole



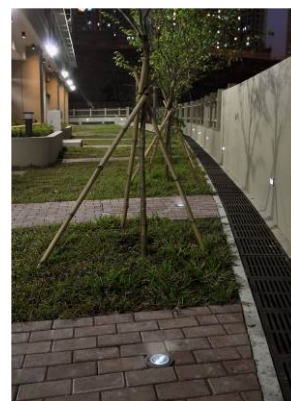
Mono-crystalline PV panels



Semi-transparent amorphous PV panels



Solar powered LED bollard light



LED accent lighting

2. Environmental Policy and Energy Saving Measures in Schools

To take collaborative actions to face the challenge arising from global climate change, we issued a circular in April 2017 to remind all schools to formulate and put in place a school-based environmental policy and implement measures for energy saving, aiming to enhance students' environmental awareness, develop their environmentally friendly attitude and promote green practices and environmental education. To adopt best practices for energy saving, schools are reminded to maintain an average indoor temperature between 24°C and 26°C during the summer months as far as practicable. In line with the Government's environmental policy, schools are encouraged to install renewable energy systems in their school premises subject to the condition that the activities and safety of students will not be jeopardised. A circular memorandum was issued in September 2019 to inform schools of the points to note on their participation in the Feed-in Tariff Scheme when promoting environmental education. To avoid and reduce waste plastic bottles at source, government schools are required to implement the Government's arrangement to cease selling plastic bottled water measuring one litre or less at automatic vending machines at their school premises. To encourage the community to minimise the use of disposable tableware and cultivate the habit of using reusable tableware, government schools have been avoiding the use of disposable tableware as far as possible in food kiosks and tuck shops of their school premises. In addition, an environmentally friendly lifestyle among students has been promoted via a circular on green lunch and reduction of food waste in school issued in June 2016. Under the "Greening for the Chest" Campaign collaborated by our Community Youth Club, we encouraged schools to support the green campaign of 2019-20 through EDB Circular Memorandum No. 165/2019.



3. Energy and Carbon Audit

We worked closely with the Electrical and Mechanical Services Department to identify new energy saving opportunities. Carbon audit for our offices in Central Government Offices has been carried out since 2013 as an on-going measure. In 2019, carbon audits were carried out for 11 government schools and Kowloon Tong Education Services Centre covering the period from 1 January to 31 December 2019.

The total carbon emission for these 12 premises

(with total floor area of 125 207 m² and 1 695 employees) was 5 533 tonnes of CO₂ -e.

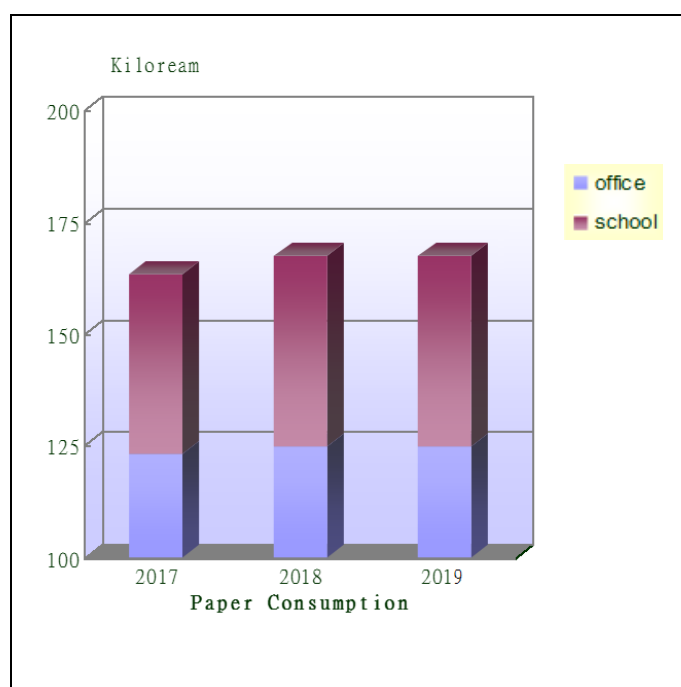
We have carried out energy saving projects (such as installation of lift regenerative devices, improvement of efficiency of chiller plants and replacement of split-type air-conditioning systems) and taken various measures (including removing part of the fluorescent lamps in over-lit areas, switching off some passenger lifts during non-peak hours and adding occupancy sensor control in toilets) to take forward the recommendations of the energy / carbon audits.



4. Consumption of Resources

(a) Saving Paper and Electricity

We have been making continuous efforts in economising the use of paper and reducing electricity consumption. Compared with last year, our paper consumption has reduced by 0.4%.

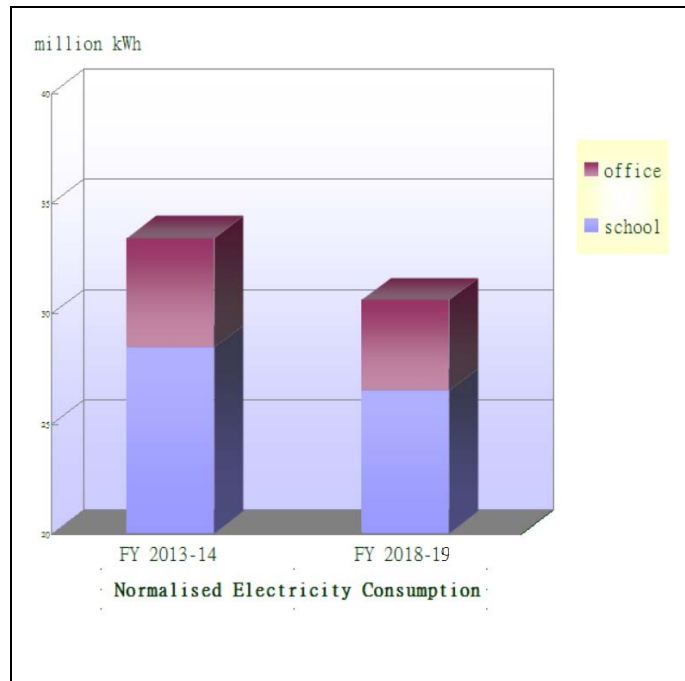


Electricity consumption of our government buildings in FY 2018-19 is compared with the base line in 2013-14 below –

	Electricity consumption (million kWh)	Electricity consumption under comparable operating conditions (million kWh)
FY 2013-14 (base line)	33.399	Not applicable
FY 2018-19	32.118 (-3.8%)	30.441 (-8.9%)

As set out above, electricity consumption of our government buildings has reduced by 3.8% from FY 2013-14 to FY 2018-19. Under comparable operating conditions of FY 2013-14, saving in electricity consumption in FY 2018-19 was 8.9% after carrying out energy saving projects (such as installation of lift regenerative devices, improvement of

efficiency of chiller plants and replacement of split-type air-conditioning systems) and implementing housekeeping measures (including shortening of operating time of the central air-conditioning systems, switching off of air-conditioning in the facilities / meeting rooms right after use, etc).



We shall continue to maintain our efforts to achieve savings in electricity and paper consumption.

(b) Conserving Energy

We shall continue to adopt energy-efficient measures and sustain our efforts in reducing energy consumption.

- Energy saving fluorescent tubes with electronic ballasts and light bulbs are used in our offices as far as possible.



- We have been strictly following the Government's policy to maintain the ambient office temperature at 25.5 °C.



- Electricity consumption reports are compiled on a quarterly basis. Internal energy audits are conducted periodically.
- Moreover, our Information Technology Management Division has deployed server virtualisation technology and cloud services to reduce energy consumption. This also reduces the need to procure new IT equipment.
- At present, there are over 600 virtual servers in the Bureau. There are also six systems running in the cloud environment of the service providers. We shall continue to deploy technologies to reduce energy consumption where applicable.



5. Reduction of Air Pollution

(a) Use of Fuel Efficient Types of Vehicles

Vehicular emissions are the major local source of air pollution and reducing emissions from vehicles is an effective way to improve air quality. We have been using unleaded petrol for our vehicle fleet since 1991.



We have gradually replaced all our six vehicles by environmentally friendly petrol saloon cars with lower emissions and more fuel-efficient engines over the past years. Among these, two are equipped with a “hybrid system” combining a gasoline engine and electric motor power to improve fuel economy and minimise emission of polluting particles.

(b) Promotion of Green Driving

To reduce idling emissions and achieve fuel saving, our drivers are regularly reminded to strictly comply with the requirements set out in the Motor Vehicle Idling (Fixed Penalty) Ordinance against idling of motor vehicle engines. Surprise inspections have been conducted quarterly to ensure compliance.



(c) Economical Pool Car Resources

Furthermore, we have been practising car pooling and task combination, i.e. to achieve multiple objectives in one journey instead of arranging separate trips. Whenever circumstances permit, car pooling arrangement would be made to reduce the use of vehicles and at the same time to meet transport demands of different users.

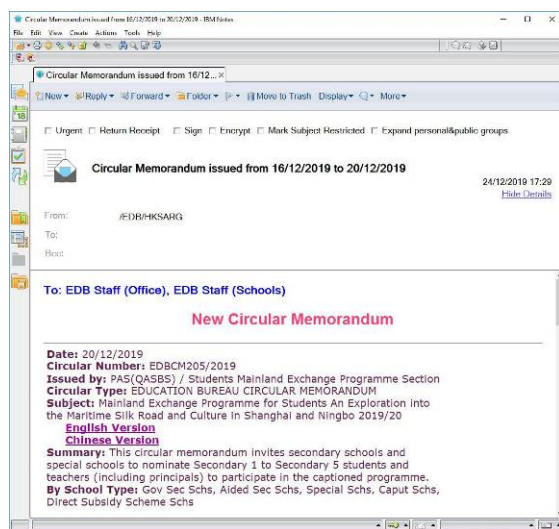


6. Highlights of Other Green Measures in 2019

We have all along adhered to the 4Rs principles of “Reduce, Re-use, Recycle and Replace disposable products” and focused on minimising waste and implementing various green measures on an on-going basis.

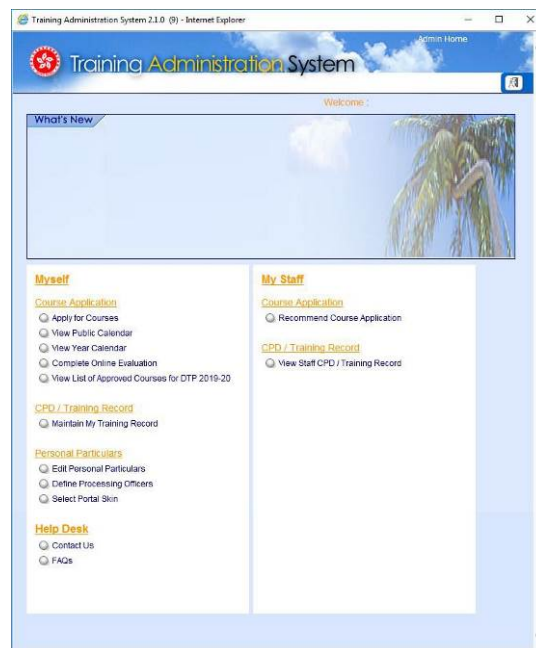
(a) Minimising and Reducing Wastes

(i) *Using Electronic Means of Communication*



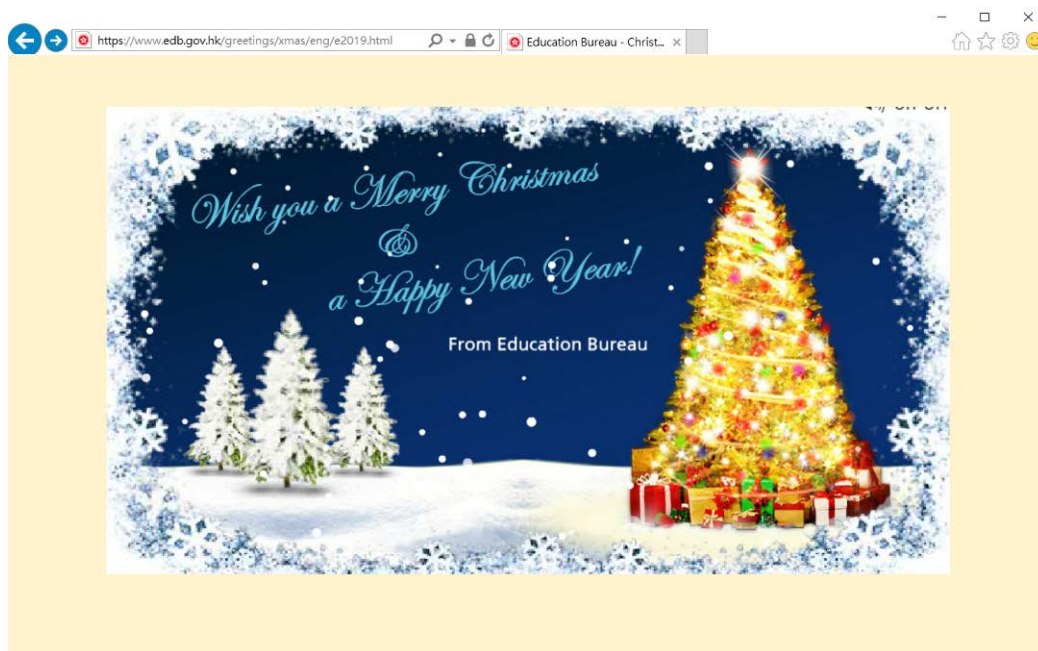
- With a view to promoting paperless operation in our daily work and reducing the use of paper, staff in the Bureau are provided with email accounts and use of electronic mails has become the most popular means of communication in the Bureau.

- Staff in the Bureau are provided with intranet accounts. The intranet platform has been widely used to disseminate the Bureau's information (including telephone directory, updates on grade management statistics, training activities, newsletters, etc.) and process administrative and personnel matters (e.g. bookings of conference rooms, leave applications and applications for training courses). We encourage staff to exchange documents through electronic means.



(ii) *Electronic Christmas Cards*

- As one of our paper-saving measures, we used e-cards to send Christmas and New Year greetings to our working partners. Staff were also encouraged to use the GovHK Internal e-Card Platform to distribute e-cards.



(b) **Re-use and Waste Recycling**

As an integral part of our green strategy, we have put in place the following recycling programme –

(i) *Green Purchasing*

- In procurement of products, we took into account environmental factors such as recyclability and energy efficiency as far as applicable. We also purchased green products like recycled ink and toner cartridges.
- We supported procurement of green products for use in the Bureau. In arranging tenders, we included common environmentally friendly terms such as trade-in clauses and recycling arrangements as far as practicable. Trade-in arrangements for supply of ink and toner printer cartridges were arranged. In this connection, a total of 863 used cartridges were returned to the suppliers concerned for recycling or



public auction in 2019. Furthermore, we collected a total of 634 pieces of computer waste for recycling either by contractors under the disposal contracts or through public auction.

- When inviting tenders for new cleansing contracts for our offices and schools, we required tenderers to include use of recycled / degradable plastic bags and approved cleansing chemical and materials in the service schedule.

(ii) Collecting Waste



- We joined the EPD's "Programme on Source Separation of Commercial and Industrial Waste" and provided green boxes in offices and schools for collection of papers, plastic and aluminium wastes for recycling.

- We collected a total of 190 239 kilogrammes of waste paper for recycling throughout the year.

(iii) Use of Recycled Paper

- Following the EPD's recommendation of wider use of recycled paper, we consumed 121 418 reams of recycled papers in 2019.
- We continued with our efforts in reducing paper consumption and measures, such as printing on both sides of paper and re-using envelopes.



(iv) *Green Christmas*

- In the exercise of “Donation of Clothing, Small Electrical Appliances and Toys” launched during Christmas in 2019, we collected clothing, small electrical appliances and toys from colleagues for recycling donation to the Salvation Army.



(c) **Improvement in Indoor Air Quality**

Under the EPD’s Indoor Air Quality (IAQ) Certification Scheme, offices in Central Government Offices in Tamar have obtained the “Excellent Class” IAQ Certificate while offices in Wu Chung House and Kowloon Tong Education Services Centre have obtained the “Good Class” IAQ Certificate in 2019. We will continue to monitor the indoor air quality regularly to ensure that the IAQ meets the standard promulgated by the EPD.



(d) Promotional Green Activities

We organised a series of activities to promote green management in the Bureau in 2019, including –

(i) *The Twentieth Paper Saving Competition*

- We organised the twentieth Paper Saving Competition to promote paper saving in daily operation among colleagues working in government schools and offices.



Prize

Best Performance
Award in Paper Saving

Best Progress Award in
Paper Saving

Winning Teams

Curriculum Development Institute

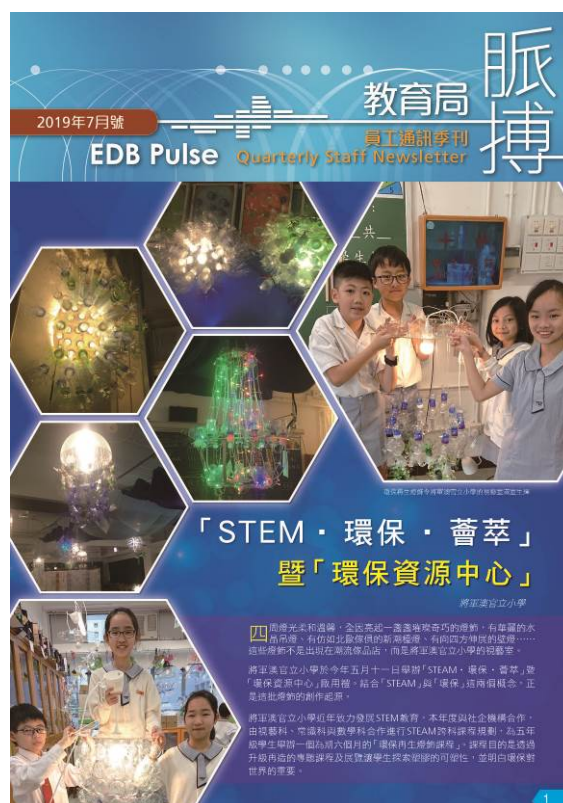
Clementi Secondary School

Administration Division

Cheung Chau Government Secondary
School

(ii) *Promotional Messages on Newsletter and Bureau Intranet*

- To encourage direct participation by colleagues and to appeal for their support and contribution in protecting the environment, we disseminated green messages and notices and green tips in the Bureau's newsletter "EDB Pulse" and other internal publications through the EDB intranet.



Way Forward

We fully recognise the importance of environmental protection and green management. The Bureau will continue to devote efforts and resources to maintaining a high level of green management practice and setting a good example to the community.

In terms of education, we will continue to encourage schools to develop a green culture, and to equip students with the knowledge, skills and attitude to become environmentally friendly citizens. To support schools in environmental education, we will continue to provide a broad range of services including school visits, teacher education programmes, territory-wide green activities, and learning and teaching resources.



Within the Bureau, we will strive to reduce electricity consumption having regard to actual operational requirements and will implement energy saving proposals / projects according to the recommendations of energy / carbon audits, e.g. installation of lift regenerative device, improvement of efficiency of chiller plants and replacement of split-type air-conditioning systems.



TARGETS FOR 2020

Our targets for promotion of environmental education in the 2019/20 school year are as follows –

<i>Key Action Area</i>	<i>Targets for 2019/20 School Year</i>
<ul style="list-style-type: none"> Conducting school inspections and visits to give advice on environmental education 	<ul style="list-style-type: none"> To advise schools on environmental education during school visits and other learning experience activities
<ul style="list-style-type: none"> Organising school activities to enhance students' awareness of environmental protection 	<ul style="list-style-type: none"> To fund 380 school visits to the Mai Po Nature Reserve To organise activities in collaboration with various government departments and non-government organisations to promote green living To subsidise schools through the "Outdoor Education Camp Scheme" with the aims to deepen students' understanding and love of the nature as well as to enhance their awareness of environmental protection
<ul style="list-style-type: none"> Providing advice on organisation of school activities and production of resources materials for schools to promote environmental protection 	<ul style="list-style-type: none"> To enrich the web-based learning and teaching resources, such as the life event exemplars relating to environmental education



In conducting our business, we will continue to economise on the use of resources and minimise waste. In the coming year, we will continue to –

1. initiate and promote environmentally friendly housekeeping practices;
2. conduct indoor air quality check and devise more effective measures to improve air quality;
3. implement housekeeping measures and best practices for energy saving and conduct energy / carbon audits where necessary with a view to achieving energy saving;
4. implement improvement measures to achieve further energy conservation according to the recommendations of energy / carbon audits;
5. promote the use of renewable energy;
6. promote and encourage saving of paper among staff through organising activities and publishing encouraging messages in internal publications;
7. promote the use of electronic means of communication within the Bureau; and
8. organise activities and training to promote staff's awareness and participation in green management.



Contact Us



If you have any comments / suggestions, please send them to the Centre Manager (Address: Room E301, East Block, Kowloon Tong Education Services Centre, 19 Suffolk Road, Kowloon Tong, Hong Kong; Email address: edbinfo@edb.gov.hk; Fax no.: 2117 0081). Thank you.

