Environmental Report

2020





Education Bureau

The Government of the Hong Kong Special Administrative Region of the People's Republic of China



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Cover Photo: Charity Sale of Flowers in Fuk Wing Street Government Primary School held in December 2020

I. Profile and Environmental Policy of Education Bureau

Vision and Mission

1.1 Our vision is to provide quality school education for our students, develop their potential to the full, and prepare them for the challenges in life.

- 1.2 Our mission is to -
 - deliver professional services and ensure effective use of resources; and
 - forge partnerships to promote excellence in school education.

Our Work

- 1.3 Our major responsibilities are
 - formulating, developing and reviewing policies, programmes and legislation in respect of education from pre-primary to tertiary levels; and
 - overseeing the effective implementation of educational programmes.

1.4 We are also the School Sponsoring Body for 34 government primary schools and 31 government secondary schools.



Environmental Goal and Policy

1.5 Our environmental goal is to maintain an environmentally friendly surrounding and create a sustainable environment for our ensuing generations.

- 1.6 In meeting our goal, we are committed to
 - (a) promoting environmental education;
 - (b) adopting green designs and construction works for schools;
 - (c) implementing environmental housekeeping measures; and
 - (d) enhancing environmental awareness and compliance with relevant legislation and codes of practices amongst colleagues.



Figure 2: Learning activities in Hennessy Road Government Primary School in November 2020 Figure 3: Kinetic Energy Bike currently installed in South Yuen Long Government Primary School



II. Key Environmental Performance in 2020

(A) ENVIRONMENTAL EDUCATION

Our mission is to enhance 2.1students' 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. We also collaborate with renowned green groups, such as the Environmental Campaign Committee and the World Wide Fund for Nature Hong Kong Education Committee to provide advice on organisation of school activities and production of resources materials to schools.

2.2 To fulfill the goal of promoting environmental education, various initiatives were undertaken in 2020, despite class suspension and workfrom-home arrangements arising from the outbreak of COVID-19. They include -

- (a) <u>Provision of learning</u> <u>resources to schools</u>
 - i. Three professional development programmes related to environmental education were provided for Liberal Studies teachers. One of the programmes was held in

collaboration with the Education University of Hong programmes Kong. The range covered а of environmental issues in Hong Kong, such as sustainable development, organic farming, smart citv and housing development.

- ii. A seminar namely "New Normal Life-wide Learning Highlights" for primary and secondary school teachers was held to promote student awareness about nature and conservation through the use of learning and teaching resources provided by Ocean Park Hong Kong.
- iii. An online seminar on "Climate Change – a Real and Present Danger" cum virtual visit to the Hong Kong Observatory, and a visit and case study at an upcycling factory in Tai Po Industrial Estate were organised for geography teachers to enrich their understanding of the themes.

- iv. "Induction Programme of Education for Values **Teachers**" was held for secondary primarv and teachers to enrich their knowledge curriculum of planning and related resources support on values education, including sustainable development education.
- v. Four life event exemplars on topics of climate change, green living, plastic pollution and disposal of masks in the countryside were developed for primary and secondary schools.
- vi. Learning and teaching materials, namely "Liberal Curriculum Studies **Resources Booklet Series: Energy Technology and the Environment**", were provided for Liberal Studies An e-learning teachers. platform for the Public Engagement on Long-term Decarbonisation Strategy was produced in collaboration with the Environment Bureau to provide learning and teaching resources for teachers and students.



Figure 4: Visit to T Park by Hong Kong Southern District Government Primary School in January 2020

(A) ENVIRONMENTAL EDUCATION (continued)

- (b) <u>Promoting students'</u> <u>environment awareness</u>
- i. Visits to Mai Po Nature Reserve

Funding was provided for **45** school visits to the Mai **Po Nature Reserve** during January and November 2020.

ii. Student Environmental Protection Ambassador (SEPA) Scheme 2020/21

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 2020/21 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 **231 primary and secondary schools** participated in the SEPA Scheme 2020/21. As at December 2020, **5 572**

student ambassadors were appointed to assist teachers in organising environmental education activities. Schools, families and student ambassadors 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 also resources were introduced through a series of environmental training and activities.



Figure 5: SEPA Scheme Activity held in January 2020

iii. Outdoor Education Camp iv. Scheme (OECS)

We support schools in organising OECS, in which enhancing students' awareness of environmental protection is one of the learning elements. Related themes or activities include "Nature and I", "Science Ecology Trips". and "Climatology, Geography and Ecology Study Camps", etc. Some schools also adopt environmental protection as the main theme of OECS, such as "Green Living" and "Saving Energy".

A total of **7 953 students**, including **1 569 secondary and 6 384 primary students** from 77 schools (16 secondary and 61 primary schools), participated in OECS in the 2019/20 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 end of 2020, the participating schools recycled about 143 067 kg of waste paper, 101 239 kg of plastic materials and 7 957 kg of metal containers.



Figure 6: Uniform Recycling Programme in Tsuen Wan Government Secondary School in November 2020 Figure 7: Waste Upcycling Competition Winning Entry of Queen's College in November 2020

(B) BUILDING GREENER SCHOOLS



Figure 8: Photovoltaic systems installed in schools



Figure 9: Modular Integrated Construction module for classrooms



- (a) reduction in noise, air and water pollution during construction through implementation of mitigation measures;
- (b) 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;
- (c) reduction in construction waste by using Modular Integrated Construction (MiC), Modular Integrated Mechanical, Electrical and Plumbing (MiMEP), and more precast and prefabricated building elements;
- (d) use of Building Information Modelling (BIM) to enhancing the design, construction, and project management as well as reducing the construction waste;
- (e) increased application of re-usable materials, in particular metal framework, site hoarding and recycled products;
- (f) improvement to indoor air quality by installing fresh air pre-conditioners (FAP) in classrooms and using low volatile organic compound-emitting building materials;
- (g) use of environmentally friendly refrigerant for air-conditioners and chlorofluorocarbon free thermal insulating materials;
- (h) 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 variable speed drive system for the lifts / pumps;
- (i) use of water saving devices such as dual-flush cisterns and sensor-taps for wash basins;



Figure 10: Landscaping on Roof and School Playground of Caritas Mother Teresa School

- (j) increased landscaping in school playgrounds, and upper levels and roof floor (including vertical greening);
- (k) 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;
- (l) provision of adequate space and waste separation bins to facilitate separation, collection and storage of recyclable materials for recycling;
- (m) use of shared facilities among schools to enable a greener and more spacious environment in these schools;
- (n) introduction of hygiene improvement measures to schools, including toilet provision without main entrance doors and hand-washing facilities in playgrounds; and
- (o) provision of Central Food Portioning Area to facilitate the use of re-usable cutlery and food containers and to reduce food wastage.



(C) ENVIRONMENTAL HOUSEKEEPING MEASURES

Green Management Framework

2.4 A cross-divisional Bureau Green Management Working Group chaired by our Bureau Green Manager at directorate level (i.e. Principal Assistant Secretary (Administration)) with representatives from all divisions has been set up since 1999. It has been overseeing the implementation of green housekeeping programmes; initiating and monitoring the progress of green measures; reviewing the overall strategy for green management in the Bureau; and monitoring energy and paper consumption.

Energy and Carbon Audit

2.5 We have worked closely with the Electrical and Mechanical Services Department to identify new energy saving opportunities. Carbon audit for our offices and government schools have been carried out since 2017 as an on-going measure. In 2020, carbon audits were carried out for **Kowloon Technical School** (with total floor area of about 13 300 m² and 105 employees) and **Kowloon Tong Education Services Centre** (with total floor area of about 30 500 m² and 690 employees) covering the period from 1 January to 31 December 2020. The carbon emission for these two premises was **231 tonnes of CO2 -e and 1 089 tonnes of CO2 –e respectively**. We have carried out energy saving projects (such as installation of lift regenerative devices, improvement of efficiency of chiller plants and replacement of splittype air-conditioning systems) and taken various housekeeping measures to take forward the recommendations of the energy / carbon audits.



Figure 11: Green Area in Kowloon Technical School



Figure 12: Roof Garden in Kowloon Tong Education Services Centre

(C) ENVIRONMENTAL HOUSEKEEPING MEASURES (continued)

Economical Consumption of Resources

2.6 We have been striving for economy in the use of resources in the Bureau for environmental protection.

(a) Saving Paper

We have been making continuous efforts in economising the use of paper. Compared with 2019, our paper consumption for 2020 has reduced by 24.2%. We continued to reduce paper consumption through various measures such as use of electronic school circulars to release school information, implementation of electronic classroom arrangements and printing of multiple pages per sheet.



(b) <u>Conserving Energy</u>

i. Electricity consumption of our office premises and government schools in the financial year (FY) 2019-20 is compared with the base line in FY 2013-14 below –

Table 1: Electricity consumption in FY 2019-20 compared with FY 2013-14

	Electricity consumption (million kWh)	Electricity consumption under comparable operating conditions (million kWh)
FY 2013-14 (base line)	33.399	Not applicable
FY 2019-20	29.864 (-10.6%)	30.205 (-9.6%)

ii. As set out in *Table 1* above, **electricity consumption** of our office premises and government schools has **reduced by 10.6% from FY 2013-14 to FY 2019-20**. Under comparable operating conditions of FY 2013-14, **saving in electricity consumption in FY 2019-20** was 9.6% discounting the factors relating to class suspension and work-from-home arrangements.



Figure 14: Normalised electricity consumption of EDB

- iii. In the year, we continued to reduce electricity consumption by implementing housekeeping measures -
 - shortening of operating time of the central air-conditioning systems;
 - switching off of air-conditioning in the facilities / meeting rooms right after use;
 - using energy saving LED tubes in our premises as far as possible;
 - strictly following the Government's policy to maintain the ambient office temperature at 25.5°C;
 - monitoring energy consumption by regular checking and compiling electricity consumption reports; and
 - deploying server virtualisation technology and cloud services to host a large number of servers.

Improvement in Air Quality

2.7 $\,$ On the front of improving air quality, we have deployed different strategies -

(a) 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 2020. We will continue to monitor the indoor air quality regularly to ensure that the IAQ meets the standard promulgated by the EPD.

(b) <u>Use of fuel-efficient types of vehicles</u>

- i. 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.
- ii. In accordance with the relevant guidelines on Green Procurement in the Government, all our six vehicles have been replaced 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.

(c) <u>Promotion of green driving</u>

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.

(d) <u>Economical pool car resources</u>

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.

Waste Avoidance and Reduction Measures

2.8 We have all along adhered to the concept of 4Rs, i.e. reducing, re-using, recycling and replacing disposable products, and focused on minimising waste and implementing various green measures on an on-going basis.

(a) <u>Using electronic means of communication</u>

We encourage staff to communicate through electronic means, and use the intranet platform to disseminate the Bureau's information (updating grade management statistics, training activities, newsletters, etc.) and process administrative and personnel matters (e.g. leave applications, bookings of conference rooms and applications for training courses).

(b) Green purchasing

- i. In procurement of products, we took into account environmental factors such as recyclability and energy efficiency. We also purchased green products like **recycled ink and toner cartridges**.
- ii. Trade-in arrangements for supply of ink and toner printer cartridges were arranged. In this connection, a total of **1 012 used cartridges were returned to the suppliers** concerned for recycling in 2020. Furthermore, we collected a total of **1 494 pieces of computer waste for recycling** by contractors under the disposal contracts or through public auction.
- iii. When inviting tenders for new cleansing contracts for our offices and schools, we require tenderers to **use recycled / degradable plastic bags** and **approved cleansing chemical and materials**.

(c) <u>Collecting waste</u>

- i. We have 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.
- ii. We collected a total of **148 990 kilogrammes of waste paper** for recycling throughout the year.

(d) <u>Use of recycled paper</u>

- i. Following the EPD's recommendation of wider use of recycled paper, we consumed **89 813 reams of recycled papers** in 2020.
- ii. We pursue our efforts in reducing paper consumption and measures, such as printing on both sides of paper and re-using envelopes.



(D) PROMOTIONAL GREEN ACTIVITIES

2.9 Apart from reminding staff to observe green measures through regular circulation of circulars and guidelines, we also organised a series of activities in 2020 to raise awareness and compliance with green practices amongst colleagues –

(a) The 21st Paper Saving Competition

We organised the 21st Paper Saving Competition to promote paper saving in daily operation among colleagues working in government schools and offices.



Figure 15: Prize Presenter and Representatives of Prize-winning Teams (From right) Mr K K IU, Principal (Yuen Long Public

Secondary School) Mr Eric CHAN, Principal (Queen Elizabeth

School)

Mr Mike CHENG, Principal Assistant Secretary (Administration)

Miss Louisa CHAN, Representative of Further & Higher Education Branch

Ms Eva CHEE, Representative of Special Education Division

(b) <u>Promotional messages on</u> <u>newsletter and Bureau</u> <u>intranet</u>

We disseminated green messages and notices and green tips through the Bureau's newsletter "EDB Pulse" and other internal publications on our intranet.





Figure 16: Extracted from "EDB Pulse" issued in January 2020

Table 2: Result of the 21st Paper Saving Competition

Group	Prize	Winning Teams
School	Best Performance Award in Paper Saving	Queen Elizabeth School
	Best Progress Award in Paper Saving	Yuen Long Public Secondary School
Office	Best Performance Award in Paper Saving	Special Education Division
	Best Progress Award in Paper Saving	Further & Higher Education Branch



Figure 17: Green Christmas 2020

) <u>Green Christmas 2020</u>

In "Green Christmas 2020", we encouraged staff to use e-cards and to donate clothing, small electrical appliances and toys.



III. Towards a Greener Future

3.1 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 practices and setting a good example to the community.

Environmental Education

3.2 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.



Figure 18: Various environmental education activities in 2020 and 2021

Energy Saving Projects

3.3 We will strive to reduce electricity consumption, having regard to actual operational requirements and implement energy saving will proposals / projects according to the recommendations of energy / carbon audits. Major projects in the pipeline include conversion of air-cooled chillers chillers water-cooled and to replacement split-type airof conditioning systems.

> Figure 19: An air-cooled chiller in Kowloon Tong Education Services Centre will be replaced by a more energy efficient water-cooled chiller in 2022



Housekeeping Measures

3.4 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 -

- (a) initiate and promote environmentally friendly housekeeping practices;
- (b) conduct indoor air quality check and devise more effective measures to improve air quality;
- (c) implement housekeeping measures and best practices for energy saving and conduct energy / carbon audits where necessary with a view to achieving energy saving;
- (d) promote the use of renewable energy;
- (e) promote and encourage saving of papers among staff through organising activities and publishing encouraging messages;
- (f) promote the use of electronic means of communication within the Bureau;
- (g) promote paperless meetings through the use of projectors and portable notebook computers in meetings; and
- (h) organise activities and training to promote staff's awareness and participation in green management.

Contact Us

3.5 If you have any comments / suggestions, our Bureau Green Manager can be contacted through any of the following means –

Mail: Room E301, East Block, Kowloon Tong Education Services Centre, 19 Suffolk Road, Kowloon Tong, Hong Kong Email: edbinfo@edb.gov.hk

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