

Environmental Report

2012



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1. Director's Message



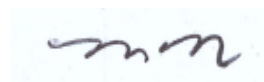
I am pleased to present the Environmental Report 2012 of the Hong Kong Observatory (HKO). This report sets out the environmental policy in HKO and provides an overview of our performance and achievement in 2012.

HKO attaches great importance to environmental conservation and we are fully committed to supporting government's policies on environmental protection and sustainable development. Apart from conforming to the government's green regulations and guidelines, we also strive to foster a green culture and promote an environmentally responsible attitude among our stakeholders.

Thanks to the dedication and hard work of everyone at HKO in 2012, we continued to exert great efforts in organizing various green activities within HKO, such as the Light-off Day and Car-free Day, to arouse colleagues' awareness on environmental protection. We also continued to reach out to the community to promote knowledge in climate change by conducting public talks, school visits and exhibitions and by publishing articles on climate change throughout the year.

We achieved significant normalized reduction in electricity consumption in 2012 when compared to the figure in the baseline year of FY2007/08. The indoor air quality of buildings in our Headquarters was also categorized as "Good Class" under the Indoor Air Quality Certification Scheme for offices and public places in 2012. Moreover, our efforts in green management once again got recognition as we were awarded the Certificate of Merit in the 2012 Hong Kong Awards for Environmental Excellence (HKAEE) - Sectoral Awards (Public Organisations and Utilities). This is the fifth consecutive year that HKO's efforts are awarded under this scheme.

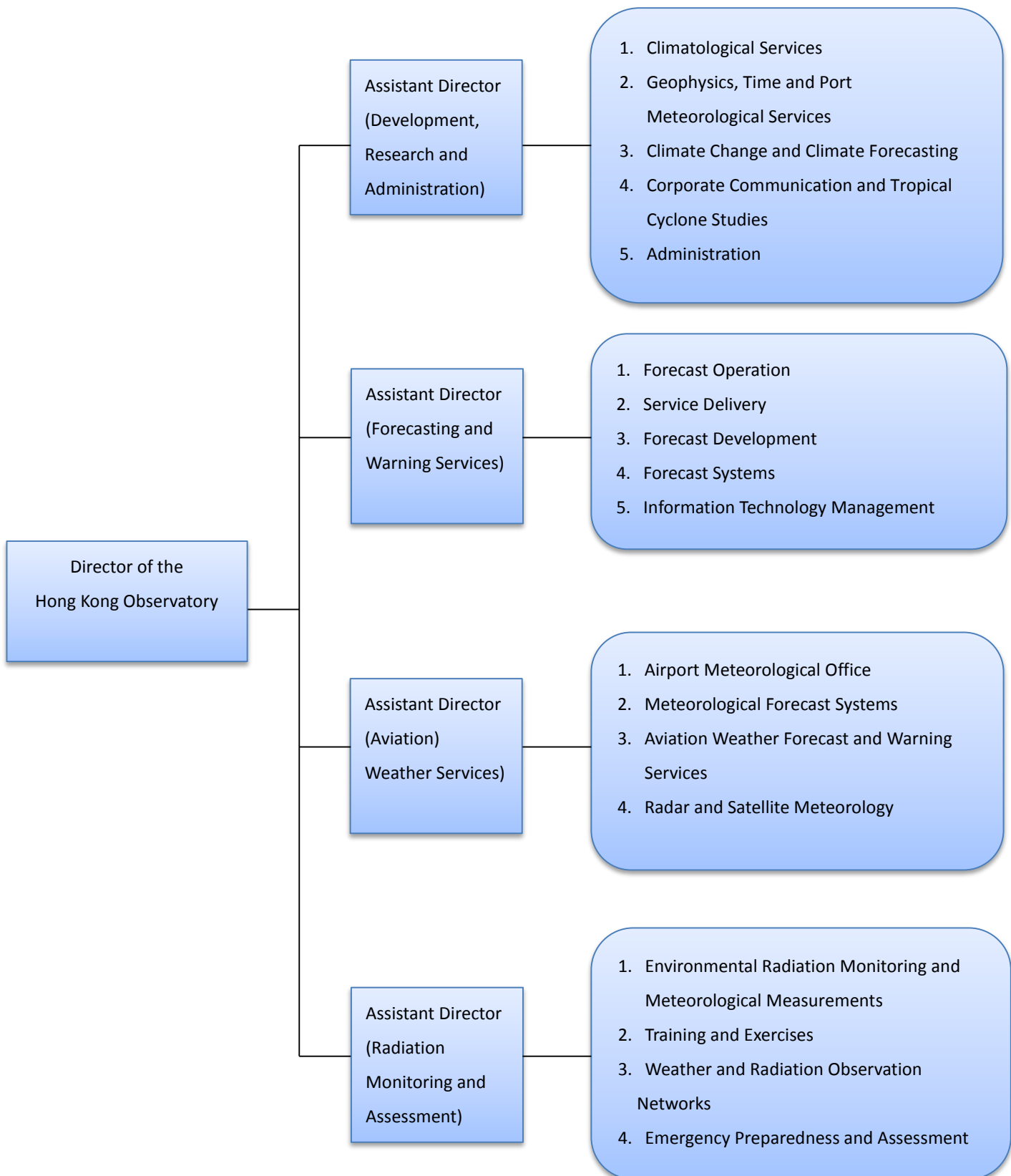
To build a better society is part of HKO's vision and we shall make every endeavour to enhance our environmental performance in the years ahead. Readers are welcome to provide comments and feedback to help us identify ways for further improvements.



C M SHUN
Director of the Hong Kong Observatory



2. Organization Chart



3. Staff Establishment

HKO had an approved establishment of 292 as at 31 December 2012. Details are shown in Table 1 below :

Grade	Establishment
Directorate	5
Scientific Officer Grade	53
Experimental Officer Grade	47
Radar Specialist Mechanic Grade	23
Scientific Assistant Grade	95
Common Grades	24
General Grades	45
Total	292

Table 1 : HKO Establishment as at 31 December 2012

4. Financial Provision

The financial provision of HKO in FY2012-13 was \$233.8 million, which was wholly voted for operational expenses in the financial year.



5. Office Location

In 2012, HKO operated 4 offices. Their locations were as follows:

- Hong Kong Observatory Headquarters (HKOHQ) at 134A, Nathan Road, Tsim Sha Tsui;
- Miramar Tower Office at Units 2304-09, 23/F, Miramar Tower at Tsim Sha Tsui;
- King's Park Meteorological Station at Yaumatei; and
- Airport Meteorological Office at Chek Lap Kok.

HKO also operated 4 radar stations in Tai Mo Shan, Tate's Cairn, Siu Ho Wan and Tai Lam Chung. As at 31 December 2012, HKO operated a total of 91 weather stations including automatic weather stations, rain-gauges, anemometers and tide stations (Figure 1):

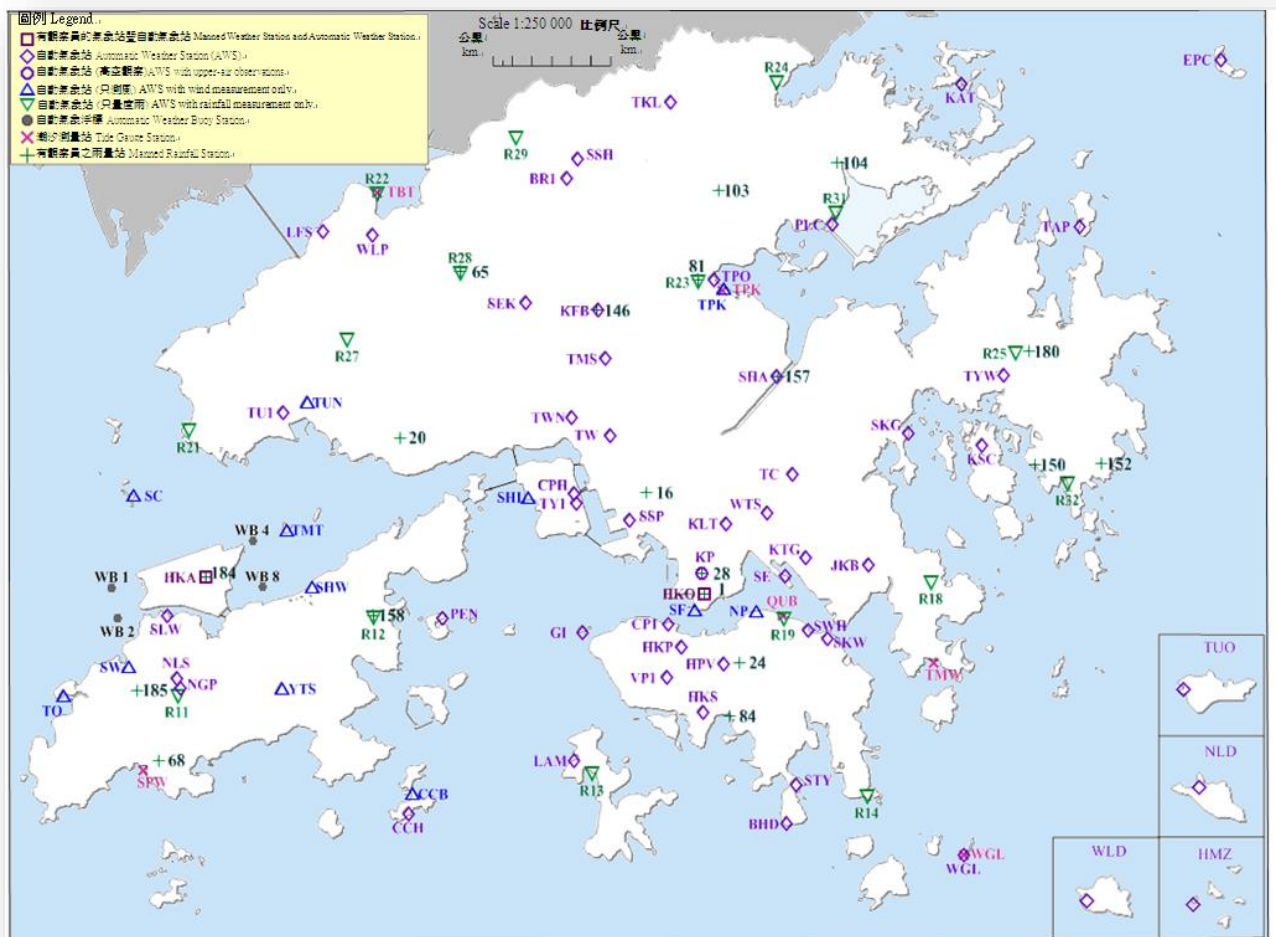


Figure 1 : Locations of Weather Stations, Rainfall Stations and Tide Gauge Stations as at 31 December 2012



6. Key Responsibilities

The Observatory is responsible for three main programme areas:

- (a) **Weather Services**
To provide weather services to meet the public's demand for short to medium range forecasts and warnings of hazardous weather and to provide forecasts for international aviation and shipping in accordance with the standards of international organisations.
- (b) **Radiation Monitoring and Assessment**
To provide information on local environmental radiation levels and effects and to advise the Government on countermeasures that may be necessary during nuclear emergencies.
- (c) **Time Standard and Geophysical Services**
To maintain the Hong Kong time standard and to provide geophysical, oceanographic, astronomical and climatological information and consultative services to the public and private sectors.

7. Stakeholders

This report is prepared annually to meet the needs of:

- (a) the general public receiving HKO information via the media, telephone, mobile devices or by browsing our website;
- (b) all Government bureaux and departments;
- (c) visitors to HKO; and
- (d) other users of HKO services including those from the aviation, shipping, business, industry, education, engineering, public utility and tourism sectors.



8. Environmental Policy

We adhere to the departmental environmental policy and meet the guidelines issued by the Environmental Protection Department and other government departments, such as EMSD and ArchSD. Moreover, we are committed to the Clean Air Charter, which aims at making sustained improvements to the air quality by introducing clean and energy-efficient measures in daily operation. We strive to improve the environment by:

- (a) conserving the bio-diversity and preserving the natural habitat within HKO HQ and outstations;
- (b) developing a culture of environmental protection among staff members;
- (c) employing the best practices in green housekeeping;
- (d) complying with the requirements of relevant environmental protection ordinances; and
- (e) promoting public awareness of environmental sustainability issues.

9. Green Management System

We have established two committees to formulate and implement environmental policy for HKO:

- (a) The Buildings, Grounds and Accommodation Committee

The Buildings, Grounds and Accommodation Committee chaired by the Assistant Director (Development, Research and Administration), evaluates all major civil and building services works carried out on HKO premises and grounds to minimize the impact on the environment. Members include the Departmental Secretary (Green Manager) and four Senior Scientific Officers from each of the four branches.

- (b) HKO Working Group on Energy and Environment

The HKO Working Group on Energy and Environment was established in 2006.



The Green Manager acts as the convenor with staff from different grades/ranks and branches as members. The Working Group aims to collect green ideas from staff and promote green awareness among all levels in HKO. It also serves as the Energy and Emission Management (EEM) Team for implementing the commitments under the Clean Air Charter. Regular meetings will be held to formulate new green initiatives and review the existing environmental protection measures.

(c) Green Corner

An internal website called “Green Corner” (Figure 2) was launched in December 2012 with a view for HKO staff to keep abreast of the current trend in environmental protection. Guidance for energy, paper and water conservation is posted in the Green Corner and there are also tips for energy saving at home and in office. There are also performance measurement indices which monitor the actual energy consumption of HKO



Figure 2: Green Corner launched for HKO staff

10. Environmental Measures Taken

We have adopted multi-pronged environmental measures to support government’s green initiatives and to implement our environmental policy. These measures are highlighted below:

(a) Preservation of bio-diversity

Apart from the historical and scientific values of the site (Figures 3 and 4), the HKO HQ in Tsim Sha Tau is also characterized by a lush of greenery. As can be seen from the aerial photos (Figures 5 and 6), the compound is an enclosed oasis surrounded by high-rise buildings on all sides, providing visual amenity to the surrounding neighbourhood.



The Greenery of HKO HQ



Figure 3: 1883 Building



Figure 4: Instrument shed on the lawn of HKO HQ



Figure 5: An oasis in the city



Figure 6: Trees in HKO HQ

The woodland at HKO HQ serves as a natural shelter for local birds. It is known as one of the few remaining semi-natural woodlands in urban Kowloon. Avian species like Spotted Dove, Chinese Bulbul, Crested Bulbul, Magpie Robin, Black-necked Starling and White-eye are inhabitants of our woodland (Figures 7 and 8). The woodland is of paramount importance in providing stopover for migrating birds like Flycatchers and Thrushes. Some birds, namely Brown Flycatcher, Blackbird and Grey-backed Thrush, even stay for the whole winter.

HKO treasures the bio-diversity of the site and works hard to preserve the natural habitat of the trees and vegetation at HKO HQ. Contractors are commissioned to conduct inspections and maintenance to monitor the health conditions of the plants. Tree surveys are conducted from time to time. Over 600 trees of different species can be found within the HKO HQ, for instance the Hong Kong Orchid Tree, Longan, Chinese Banyan and many other common trees in Hong Kong (Table 1).



Figure 7: White-eye



Figure 8: Magpie Robin



	English Name	Chinese Name	Scientific Name
1	Lebbek Tree	大葉合歡	<i>Albizia lebbek</i> (L.) Benth
2	Alexandra Palm	假檳榔	<i>Archontophoenix alexandrae</i> (F. Muell.)
3	Hong Kong Orchid Tree	洋紫荊	<i>Bauhinia blakeana</i> Dunn
4	Camel Foot Tree	宮粉羊蹄甲	<i>Bauhinia variegata</i> L.
5	Tall Bottle-brush	串錢柳	<i>Callistemon viminalis</i> G. Don
6	Horsetail Tree	木麻黃	<i>Casuarina equisetifolia</i> L.
7	Batavia Cinnamon	陰香	<i>Cinnamomum burmanni</i> (Nees) Blume
8	Yellow Cow Wood	黃牛木	<i>Cratoxylum cochinchinense</i> (Lour.) Blume
9	Flame Tree	鳳凰木	<i>Delonix regia</i> (Boj. ex Hook.) Raf.
10	Longan	龍眼	<i>Dimocarpus longan</i> Lour.
11	Lemon-scented Gum	檸檬桉	<i>Eucalyptus citriodora</i> Hook. f.
12	Chinese Banyan	細葉榕	<i>Ficus microcarpa</i> L. f.
13	Common Red-stem	青果榕	<i>Ficus variegata</i> var. <i>chlorocarpa</i> (Benth.) King
14	Big-leaved Fig	大葉榕	<i>Ficus virens</i> var. <i>sublanceolata</i> (Miq.) Corner
15	Pond Spice	潺槁	<i>Litsea glutinosa</i>
16	White Champak	白蘭	<i>Michelia alba</i>
17	Chinese Red Pine	馬尾松(山松)	<i>Pinus massoniana</i> Lamb.
18	Frangipani	雞蛋花	<i>Plumeria rubra</i> L.
19	Buddhist Pine , Kusamaki	羅漢松	<i>Podocarpus macrophyllus</i> (Thunb.) D. Don
20	Wood-oil Tree	木油樹	<i>Vernicia montana</i> Lour.

Table 2: Common Plant Species at HKO HQ



(b) Minimization of Paper Consumption

- ✓ Appealing to staff to use recycled paper instead of virgin paper.
- ✓ Adopting duplex printing practices and minimizing photocopying, encouraging staff to re-use envelopes and file jackets whenever possible.
- ✓ Replacing printing of newsletters and circulars by using electronic means and uploading publications on HKO website.
- ✓ Encouraging use of electronic means, such as email and e-Memo, for external and internal communications.

(c) Waste Reduction and Recovery

- ✓ Recycling is always the preferred option for disposal. In addition, all disposal proposals have to be vetted by Departmental Disposal Committee.
- ✓ Collecting empty toners and inkjet cartridges of computer printers for recycling.
- ✓ Facilitating paper wastes, plastic bottles and aluminum cans to be collected separately at source by placing recycle bins at HKO HQ.
- ✓ Encouraging staff to use re-usable stationary such as refillable ball pens.

(d) Energy Conservation

- ✓ Using clean energy, such as solar power or wind power, to support operation of automatic weather stations and radiation monitoring stations.
- ✓ Using automatic circuit-break timers to switch off unnecessary electrical appliances after office hours.
- ✓ Using energy-saving T5 fluorescent tubes in all HKO premises to reduce energy consumption and mounting motion sensors to reduce energy wastage (Figure 9)
- ✓ Segregating hot and cold air flow by setting plastic screens in the high-performance computer room to enhance cooling efficiency of the air-conditioning system.

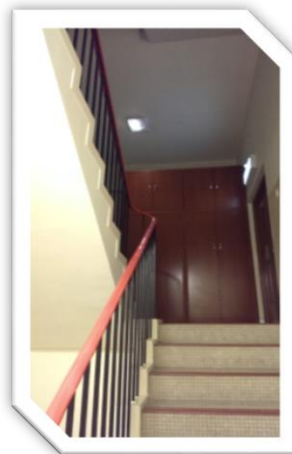


Figure 9: Lighting with motion sensors



- ✓ Conducting regular inspection to ensure lights, computers and other electrical appliances in offices, conference rooms and common corridors are switched off during lunch breaks and after office hours.
- ✓ Switching off lights, air conditioners, photocopiers, computers and other electrical appliances when they are not in use
- ✓ Organizing HKO Light-off Day every month (Figure 10).



Figure 10 : Light-off Day

- ✓ Minimizing the number of operating lifts after normal office hours.
- ✓ Using solar energy lighting device (Figure 11).

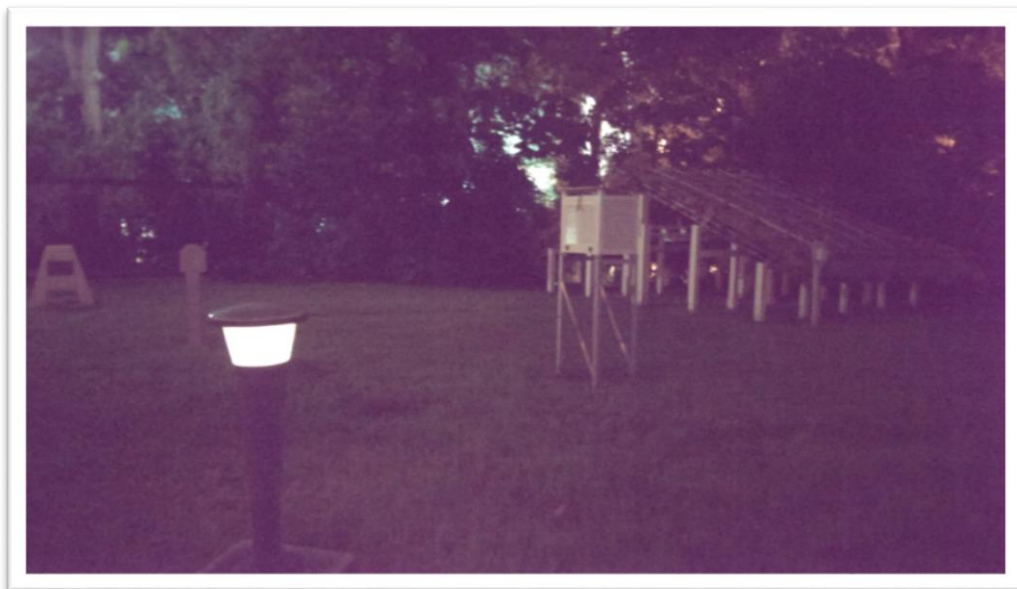


Figure 11 : Solar energy lighting device



- ✓ Minimizing the consumption of electricity by switching off unnecessary lights (Figure 12).
- ✓ Setting the ambient office temperature to 25.5°C in the summer months and switching off air-conditioning system in winter wherever and whenever appropriate by using electronic control panel.
- ✓ Encouraging staff to dress casually to reduce air-conditioning consumption.
- ✓ Conducting regular checks and maintenance on the air-conditioning systems.



Figure 12 : Minimize electricity consumption by reducing number of lights

(e) Air Quality Improvement:

- ✓ Joining the IAQ Certification Scheme with “Good” class awarded in 2012.
- ✓ Maintaining a non-smoking environment in the office premises and prohibiting smoking in the majority of outdoor areas of HKO HQ.
- ✓ Requesting EMSD to conduct regular indoor air quality checks, and carrying out regular cleaning and repairing for the air-conditioning systems.
- ✓ Organizing Car-free Day every month.



(f) Procurement Management:

- ✓ Complying with government's regulations and guidelines regarding green procurement.
- ✓ Encouraging suppliers to provide HKO with environmental friendly products and stipulating green procurement specifications in tender documents, wherever appropriate.
- ✓ Utilizing environmentally friendly products, such as:
 - ✚ Photocopiers and printers capable of double-side printing
 - ✚ Automatic sensor installed in water dispensers
 - ✚ Water-saving type flush cisterns
 - ✚ High efficiency water purifiers
 - ✚ High pressure water gun for car-washing

(g) Promoting Staff Awareness:

- ✓ Establishing the “Hong Kong Observatory Working Group on Energy and Environment”.
- ✓ Promulgating resource saving tips regularly via emails, staff notices, circulars and posters.
- ✓ Organizing staff activities, such as Car-free Days and Light-off Days, to enhance environmental awareness and encourage staff participation.
- ✓ Compiling monthly reports on energy, paper and envelop consumption and alerting staff to reduce unnecessary usage.
- ✓ Launching Green Corner to enhance colleague's awareness on energy consumption.

(h) Training and Outreach Initiatives:

I. The HKO Open Day:

HKO organizes an Open Day for the public every year (Figure 13). Information on climate change and other meteorological knowledge is conveyed to visitors through various displays and exhibits.



Figure 13 : Group photo outside the 1883 Building on HKO Open Day
II. Training on environment-related topics:

HKO organized training for both staff and members of the public.

1. For staff:

- ✓ Talk by Dr Mark Wenig of School of Energy and Environment, City University of Hong Kong
- ✓ Talk by Ho Koon Nature Education cum Astronomical Centre
- ✓ Seminar by a delegation from the International Association of Hydro-Environment Engineering and Research
- ✓ Seminar by Dr. Rebecca Lee Lok Sze (Figure14)



Figure 14: Seminar by Dr. Rebecca Lee

2. For members of the public:

- ✓ Seminars organized by Department of Geography and Resource Management of CUHK
- ✓ “Science in the Public Service” talks for school (Figure 15)



Figure 15: “Science in the Public Service” talks for school

III. Co-operation with green partners:

HKO cultivates good relationship with various green partners, such as World Wide Fund for Nature (WWF), Friends of the Earth (FoE), Green Sense and The Conservancy Association (長春社), and takes part in their green activities. HKO



joined “Order less, Waste less” scheme organized by FoE, the One-hour-long lights out event “Earth Hours 2012” by WWF and “Car-Free Day” by Greenpeace. HKO also works closely with different government departments, for example, EMSD and EPD, in implementing green policies.

IV. Promotion of public awareness on global warming and climate change:

HKO plays an active role in promoting public awareness on climate change and global warming. Talks, school visits, seminars and lectures are organized for students and the public to achieve this goal (Figure 16).



Figure 16 : School visit

HKO publishes a number of articles on interesting climate-related topics. Various kinds of education resources are also made readily available at HKO’s website with a view to enhancing public knowledge and awareness in respect of climate change issues.

V. Guided tour of the Hong Kong Observatory:

A guided tour (Figure17) is held regularly on Saturdays to provide members of the public with the opportunity to visit HKO HQ. They can learn more about the century-old historical building and appreciate the ecology of a mini-forest at the heart of the city.



Figure 17: Guided tour of HKO



11. Environmental Performance

(a) Envelope Consumption



Target 2.5% reduction achieved

The target of reducing envelope consumption by 2.5% was well achieved. Under the concerted effort of all staff, the total envelope consumption in HKO in FY2012/13 (Fiscal Year) decreased by 6,325 or 35% as compared to FY2011/12. Comparing the figure with the base year FY2007/08, the number of envelope consumption was dramatically reduced by 8,880 or 43% (Figure 18).

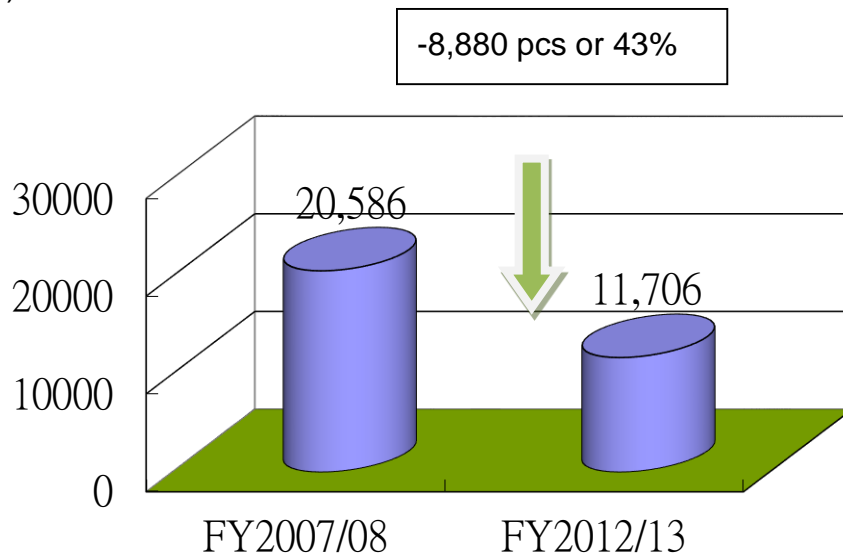


Figure 18: Envelope consumption in FY2007/08 and FY2012/13

(b) Paper Consumption



Target 2.5% reduction not achieved

While various approaches were adopted to reduce paper consumption in HKO, the paper consumption in HKO in FY2012/13 increased by 245 reams or 14.2% compared with FY2007/08 (Figure 19). The increase could be attributed to the depletion of the stock of recycled papers and the development of HKO services. Paper consumption in HKO in FY2012/13 decreased by 260 reams or 11.7% when compared with FY2011/12. HKO will continue to make a sustainable effort in reducing paper consumption.



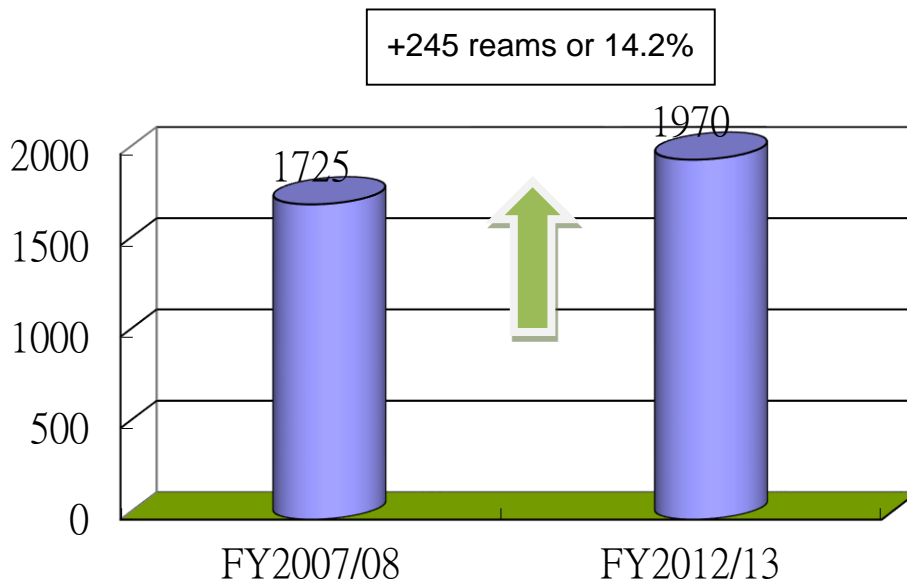


Figure 19 : Paper consumption in FY2007/08 and FY2012/13

(c) Electricity Consumption



Target 5% reduction after discounting activity changes achieved

HKO attaches great importance to a reduction in electricity consumption and various departmental measures are implemented to conserve energy. Although the gross electricity consumption in HKO in FY2012/13 increased by 629,512 units or 18.6% as compared to FY2007/08, the actual electricity consumption in HKO after discounting the activity changes in these years demonstrated a reduction of 7.1% as compared to FY2007/08 (Figure 20). Extra effort will be made in the years ahead to further reduce electricity consumption.



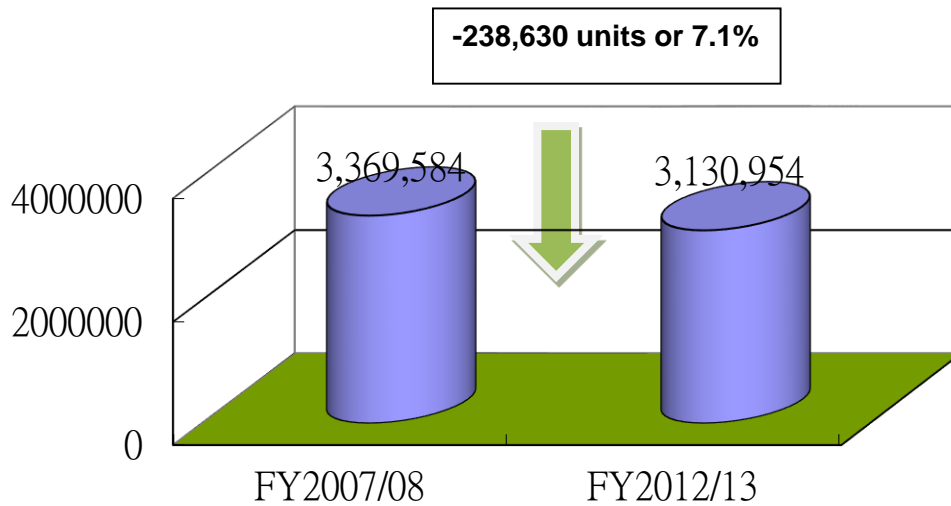


Figure 20 : Electricity consumption in FY2007/08 and FY2012/13 normalized with respect to changes in activities

12. Recognition on Environmental Protection

HKO is again awarded a Certificate of Merit in the Public Sector of the 2012 Hong Kong Awards for Environmental Excellence (HKAEE) Sectoral Awards (Figure 21). The HKAEE is one of the most prestigious and reputable award schemes in environmental protection in Hong Kong. It offers organizations a unique opportunity to benchmark their commitment in green management.



Figure 21: The Certificate of Merit in the Public Sector of the 2012 HKAEE Sectoral Award



13. Targets for Fiscal Year 2013/14

HKO aims to achieve the following targets in FY2013/14:

- 2.5% reduction in envelope consumption compared to FY2007/08
- 2.5% reduction in paper consumption compared to FY2007/08
- 5% reduction in electricity consumption compared to FY2007/08 after discounting the changes in activities
- To carry out activity for conservation of bio-diversity

14. Verification Statement

I have verified the information and data of the Environmental Report 2012. I confirm that the data presented in the Environmental Report 2012 are authentic and the methodology for the collection and analysis of data is appropriate. The report represents an accurate account of HKO's environmental actions and performance in the year of 2012.



Miss Letty NG
Green Manager
Hong Kong Observatory

15. Information and Suggestions

This report is available on our homepage at the following link :

http://www.weather.gov.hk/environmental/Environmental_Report_E.pdf and at our Resource Centre at the following address:

Units 2304-2309, 23rd floor, Miramar Tower,
132 Nathan Road, Tsim Sha Tsui, Kowloon
Tel. : 2926 8250

If you wish to obtain further information or raise any suggestions about this report, please contact our Green Manager at telephone 2926 8207 or email to dsec@hko.gov.hk.



16. Feedback Form

Please complete this form and send it back to the Green Manager, Hong Kong Observatory, 134A, Nathan Road, Tsim Sha Tsui, Kowloon, Hong Kong, or fax it to 2311 9448, or by email to dsec@hko.gov.hk.

1. Do you find the Report informative? Yes No

2. Do you find the content of the Report easy to understand? Yes No

3. What other green issues you would like to include in the Report?

4. Which aspects of the Report need to be improved?

5. What is your overall view of the Report?

Name:

Telephone:

Email: