



香港天文台  
HONG KONG OBSERVATORY



# ENVIRONMENTAL REPORT 2013



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## 1. Director's Message

I am pleased to present the Environmental Report 2013 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 2013.

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 2013, 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 2013 when compared to the figure in the baseline year of FY2007/08. Paper consumption in HKO in FY2013/14 decreased by 186 reams or 9.4% when compared with that of FY2012/13. This shows HKO's sustainable effort in reducing paper consumption. 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 2013. Moreover, our efforts in green management once again got recognition as we were awarded the Certificate of Merit in the 2013 Hong Kong Awards for Environmental Excellence (HKAEE) - Sectoral Awards (Public Organisations and Utilities).

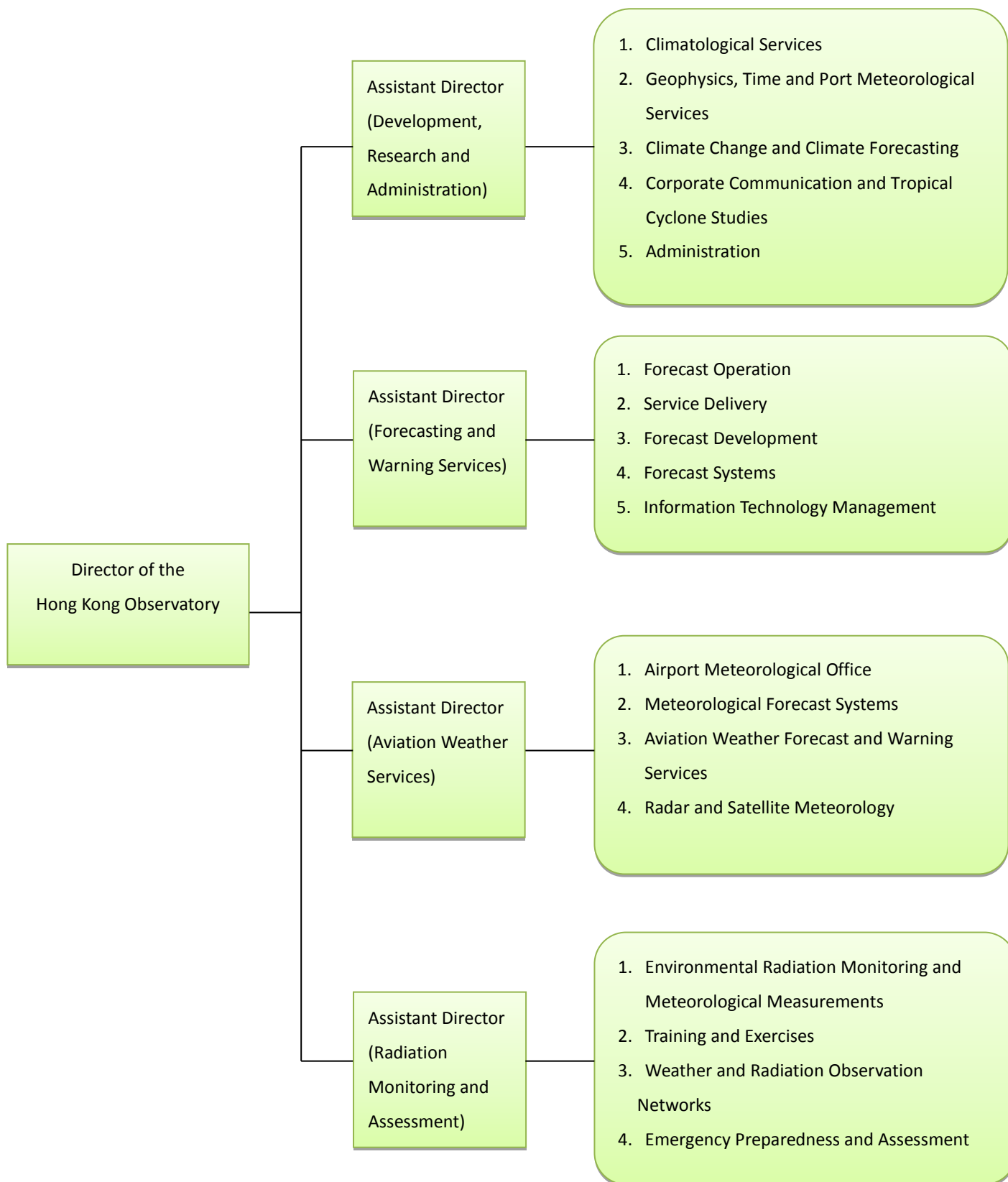
To build a better society is part of HKO's vision and we shall make every endeavour to enhance our environmental performance in the years ahead. Readers are welcome to provide comments and feedback to help us identify ways for further improvements.

C M SHUN

Director of the Hong Kong Observatory



## 2. Organization Chart





### 3. Staff Establishment

HKO had an approved establishment of 299 as at 31 December 2013. Details are shown in Table 1 below :

Grade	Establishment
Directorate	5
Scientific Officer Grade	54
Experimental Officer Grade	47
Radar Specialist Mechanic Grade	23
Scientific Assistant Grade	95
Common Grades	24
General Grades	51
<b>Total</b>	<b>299</b>

Table 1 : HKO Establishment as at 31 December 2013

### 4. Financial Provision

The financial provision of HKO in FY2013-14 was \$247.4 million, which was wholly voted for operational expenses in the financial year.

### 5. Office Location

In 2013, HKO operated 4 offices. Their locations were as follows:

- (a) Hong Kong Observatory Headquarters (HKOHQ) at 134A, Nathan Road, Tsim Sha Tsui;
- (b) Miramar Tower Office at Units 2304-09, 23/F, Miramar Tower at Tsim Sha Tsui;
- (c) King's Park Meteorological Station at Yaumatei; and
- (d) 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 2013, HKO operated a total of 90 weather stations including automatic weather stations, rain-gauges, anemometers and tide stations.



## 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 the following committee/working group 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 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. The chairman of the Working Group acts as the convenor with staff from different grades/ranks and branches as members. To give impetus to the Working Group in promoting more “Green” initiatives, starting from July 2013, the Convenor was upgraded to the directorate level. The Assistant Director (Development, Research and Administration) has taken up the chairmanship of the Working Group. Regular meetings will be held to formulate new green initiatives and review the existing environmental protection measures.

## 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 1 and 2), the HKO HQ in Tsim Sha Tsui is also characterized by a lush of greenery. As can be seen from the aerial photos (Figure 3), 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 1: 1883 Building



Figure 2: Lawn of HKO HQ





Figure 3: An oasis in the city

The woodland at HKO HQ serves as a natural shelter for local birds (Figures 4 and 5). 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. 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.



Figure 4: Trees in HKO HQ



Figure 5: local bird resting at the woodland of HKO

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 2).



	<b>English Name</b>	<b>Chinese Name</b>	<b>Scientific Name</b>
1	Lebbek Tree	大葉合歡	<i>Albizia lebeck</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	潺檣	<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.



- ✓ Using blank side of used paper for drafting, printing, photocopy and fax documents.
- ✓ Encouraging the use of electronic means, such as email and e-Memo, for external and internal communications.
- ✓ Encouraging paperless meetings.

#### (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.
- ✓ Encouraging staff to reuse “red packets” during Lunar Chinese New Year. In 2013, HKO participated in the “Recycling Red Packets” event organized by Green Action.

#### (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 6)



Figure 6: Lighting  
with motion sensors

- ✓ 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.
- ✓ Using auto-sensitized water tap in toilets to reduce water consumption.
- ✓ Minimizing the number of operating lifts after normal office hours.
- ✓ Encouraging staff to use staircase instead of lift for inter-floor traffic.
- ✓ 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 7).



Figure 7 : Light-off Day

- ✓ Using solar energy lighting device (Figure 8).



Figure 8: Solar energy lighting device

- ✓ Minimizing the consumption of electricity by switching off unnecessary lights.
- ✓ 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.

- ✓ Installing solar films in departmental vehicles and security guard room (Figure 9).



Figure 9: Installing solar film in department vehicle and security guard room

(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 environmentally 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

- ✓ Promoting the principle of “Reduce, Reuse, Recycle and Replace” and encourage staff to practise this 4-R principle in daily work where applicable.
- ✓ 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.
- ✓ Operating an internal website “Green Corner” to enhance colleagues’ awareness on energy consumption. 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.

### (h) Education and Outreach Initiatives

#### I. HKO Open Day:

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

#### II. Green and environment-related activities:

- ✓ HKO organized green and environment related activities for both staff and members of the public. A guided tour is held regularly on Saturdays for members of the public to visit HKO HQ (Figure 10). 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 10: Guided tour of HKO

- ✓ HKO organized a tree planting day on 9 November 2013 (Figure 11). Around 20 HKO colleagues and their family members joined the event and one hundred seedlings of lunaso (山杜鵑), Cochin-china excoecaroa (紅背桂) and Chinese Ixora (大葉龍船花) was planted at a site near the front gate of HKO HQ.



Figure 11 : Planting Day photos of HKO

- ✓ HKO collaborates 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), the Hong Kong Gardening Society 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 2013” by WWF and “Car-Free Day” by Greenpeace and “Red packet” by Green Actions.
- ✚ HKO collaborated with the Hong Kong Gardening Society to arrange a talk by Mr. Tony Kirkham, Head Arboretum at Royal Botanic Gardens, Kew in the woodland of HKO HQ on 28 November 2013 (Figure 12).



Figure 12: Talk by Mr. Tony Kirkham in the woodland of HKO

#### 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 13).



Figure 13 : 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. Revamp of HKO Calendar and HKO Newsletter “談天說地”:

To save the amount of papers and envelopes used, the HKO Calendar has been reduced in size from A3 to A4, and dispatched or sold in biodegradable shrink wrap cover rather than in box cover. A revamp of the HKO's newsletter “談天說地” not only created a more lively format but also cut down the number of pages drastically from 24 to 8. With its English version now only available online, papers for another 1,000 copies of printed publication were saved.

## 11. Environmental Performance

### a) Envelope Consumption



**Target 2.5% reduction achieved**

The annual cumulative envelope consumption for FY2013/14 is 4023 pcs. 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 FY2013/14 (Fiscal Year) decreased by 7,683 or 58.5% as compared to FY2012/13. When compared with the figure on the base year FY2007/08, the number of envelope consumption was dramatically reduced by 16,563 or 80% (Figure 14).

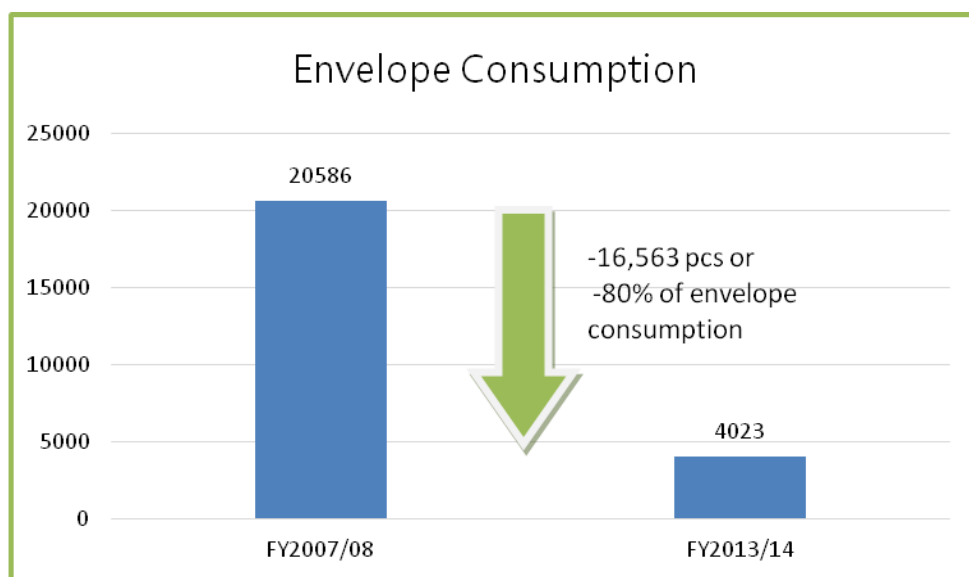


Figure 14: Envelope consumption in FY2007/08 and FY2013/14

## b) Paper Consumption



### Target 2.5% reduction not achieved

The annual cumulative paper consumption for FY2013/14 is 1784 reams. While various approaches were adopted to reduce paper consumption in HKO, the paper consumption in HKO in FY2013/14 slightly increased by 59 reams or 3.4% as compared with the baseline figure in FY2007/08 (Figure 15). The increase could be attributed to the depletion of the stock of recycled papers and the development of HKO services. However, paper consumption in HKO continued to decrease in the past few years: a reduction by 186 reams or 9.4% when compared with FY2012/13, and by 446 reams or 20% when compared with FY2011/13. This reflects HKO's continuing effort in reducing paper consumption.

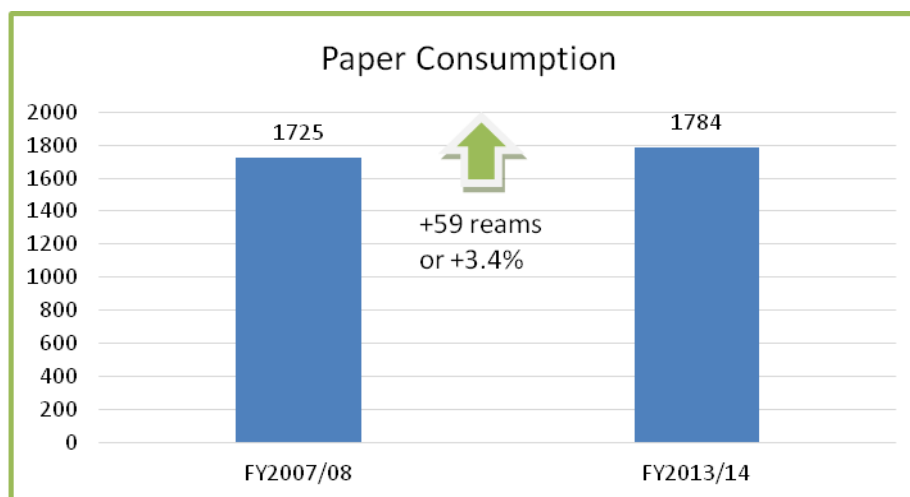


Figure 15 : Paper consumption in FY2007/08 and FY2013/14

### c) Electricity Consumption



#### Target 5% reduction after normalized against activity changes

HKO attaches great importance to the reduction in electricity consumption and various departmental measures are implemented to conserve energy. The annual cumulative electricity consumption for FY2013/14 is 4,196,883 units. Actual electricity consumption was reduced by 5.25% as compared to FY2007/08 after normalized against activity changes in the intervening years (Figure 16).

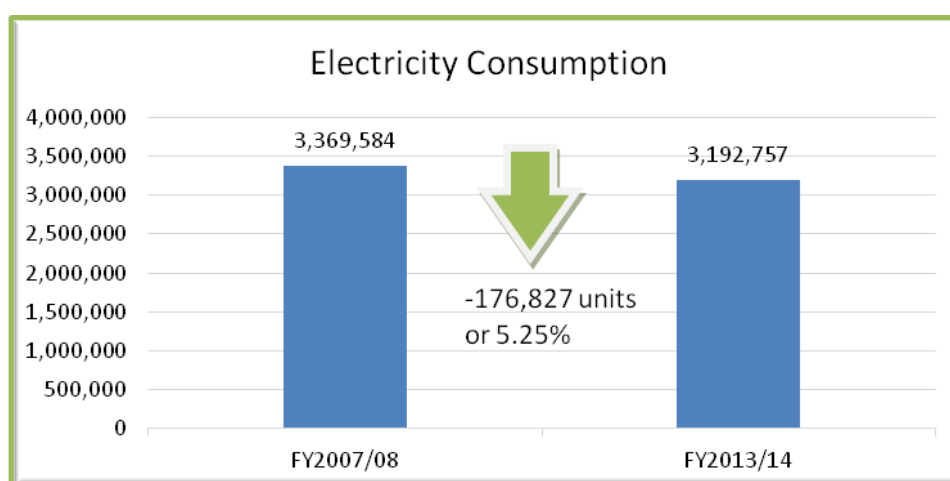


Figure 16 : Electricity consumption in FY2007/08 and FY2013/14 normalized with respect to changes in activities

## 12. Recognition on Environmental Protection

HKO is again awarded a Certificate of Merit in the Public Organizations and Utilities Sector of the 2013 Hong Kong Awards for Environmental Excellence (HKAEE) Sectoral Awards (Figure 17). 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 17: The Certificate of Merit in the Public Sector of the 2013 HKAEE Sectoral Award

## 13. Targets for Fiscal Year 2014/15

HKO aims to achieve the following targets in FY2014/15:

- 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 2013. I confirm that the data presented in the Environmental Report 2013 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 2013.

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

Units 2304-2309, 23<sup>rd</sup> 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](mailto: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](mailto: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 HKO to include in the Report?

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

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5. What is your overall view of the Report?

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Name:

Telephone:

Email: