



Civil Aviation Department Environmental Report 2018

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1 | Foreword

This Environmental Report covered the environmental performance of the Civil Aviation Department (CAD) in 2018.

In the work of environmental management, the Department strives to minimize the disturbance caused by aircraft operations to the local communities and pursue environmentally friendly operations both in various functional areas and office management.

Our Environmental Goals

CAD is committed to ensuring that all services provided by the Department as well as our operations are conducted in an environmentally responsible manner.

Our Environmental Policy

We support the Hong Kong Special Administrative Region Government's initiatives to improve the environment by:-

- Committing to a safe, efficient and sustainable air transport system in Hong Kong;
- Compliance with relevant environmental protection ordinances;
- Striving to minimize the adverse effect that the development of the aviation industry may cause to our quality of life and environment;
- Promoting waste reduction, recovery and recycling, and reduction in consumption of resources including material, fuel and energy; and
- Providing environmental education and training to staff.

2 | Aircraft Noise Management

CAD is conscious of the impact of aircraft noise on the community and has implemented a series of noise mitigating measures. We have also monitored the implementation of these noise mitigating measures and the aircraft noise situation in various districts with the aid of a computer-based Aircraft Noise and Flight Track Monitoring System.

Quieter Arrivals

Arrivals from Southwest over Water

All arriving aircraft between midnight and 7 am are required to approach from the southwest of the airport over water, unless limited by safety and weather conditions. This measure aims to reduce the number of aircraft overflying populated areas such as Sha Tin, Tsuen Wan, Kwai Chung, Tsing Yi, Sham Tseng and Tsing Lung Tau. In 2018, 85% of arrival aircraft were able to approach from the southwest of the airport between midnight and 7 am under permissible conditions.

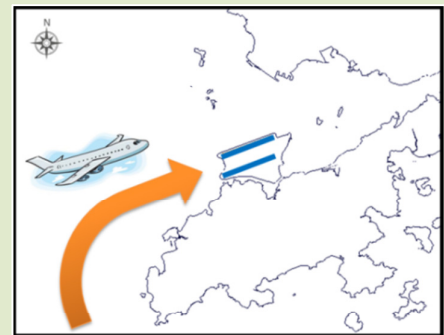


Figure 2-1: Route of arrival aircraft from southwest at night

Continuous Descent Approach Procedure

All arriving aircraft from the northeast direction are encouraged to adopt the Continuous Descent Approach (CDA) procedure when safety and weather conditions do not allow night arrivals to approach from the southwest.

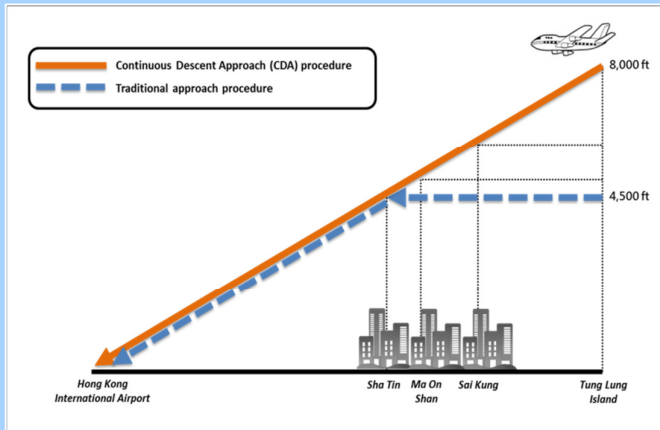


Figure 2-2: Diagram illustrating CDA procedure

The CDA procedure requires the aircraft to fly higher and adopt a lower power and drag configuration during the commencement of the approach, thereby reducing aircraft noise impacts to areas such as Sai Kung, Tseung Kwan O and Ma On Shan.

Quieter Departures

Noise Abatement Departure Procedures

All aircraft departing to the northeast are required to adopt the Noise Abatement Departure Procedures stipulated by the International Civil Aviation Organization (ICAO) so long as safe flight operations permit.

These procedures require aircraft to reduce power upon reaching an altitude of 800 feet or above, thus can alleviate aircraft noise impact during take-offs on communities in the vicinity of the airport.

Departures via West Lamma Channel

All aircraft taking off to the northeast between 11 pm and 7 am the following day are required to fly south to the West Lamma Channel, unless limited by safety and weather conditions, thereby avoiding flying over populated areas such as Kowloon, North Point, Shau Kei Wan and Chai Wan. In 2018, 97% of aircraft taking off to the northeast between 11 pm and 7 am the following day were able to take this southbound route over the West Lamma Channel.

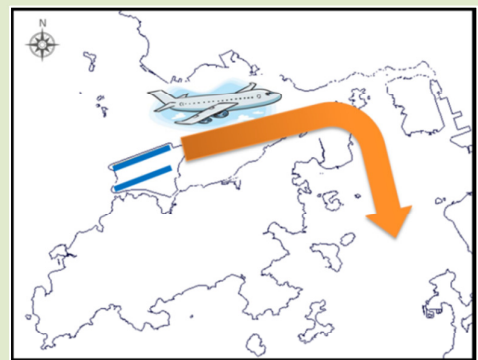


Figure 2-3: Route of departure aircraft to northeast at night

Improving Track Adherence

We have introduced a set of noise mitigating departure procedures which make use of satellite-based navigation technology for noise mitigation. Aircraft which are equipped to use the technology, when departing to the northeast of the Hong Kong International Airport (HKIA), can make use of the on-board navigation capabilities to adhere closely to the nominal centre line of the flight track during their turn to the West Lamma Channel. With better track-keeping accuracy, the aircraft can be kept at a distance from the populated residential areas. In doing so, the aircraft noise footprint can be confined and the overall aircraft noise effect on these residential areas can be reduced.

Restrictions on Noisy Aircraft

All noisy aircraft which do not comply with the noise standards stipulated in Chapter 3 of Annex 16, Volume I, Part II to the Convention on International Civil Aviation (Chapter 3 Noise Standards) are not allowed to operate in Hong Kong.

Since March 2014 CAD ceased to allow airlines to schedule aircraft whose noise levels only marginally meet the Chapter 3 Noise Standards (so-called “Marginally Compliant Chapter 3 aircraft”) to operate between 11 pm and 7 am the following day. This measure has been extended to cover the whole day since October 2014 up to present.

To further alleviate the aircraft noise impact on local communities, CAD has taken an initiative to impose more stringent requirements with additional operating restrictions on aircraft which do not comply with the noise standards in Chapter 4 of Volume I, Part II of Annex 16 to the Convention on International Civil Aviation (Chapter 4 Noise Standards), or equivalent, to operate at the HKIA from 10 pm to 7 am the following day starting from the Summer Season of 2019.

Noise Monitoring

CAD has installed an Aircraft Noise and Flight Track Monitoring System to monitor the implementation and effectiveness of various noise mitigating measures, and the noise environment in various districts. The system comprises 16 outdoor noise monitoring terminals located in the vicinity of the flight paths and a central computer server which correlates the flight data provided by radars and noise data recorded by noise monitoring terminals.



Figure 2-4: Outdoor noise monitoring terminal

3 | Aircraft Emission

Most aircraft operating at the HKIA comply with the engine emission standards as stipulated in Annex 16, Volume II to the Convention on International Civil Aviation. With the growing attention to the climate change caused by the greenhouse gas (i.e. carbon dioxide), CAD has been closely monitoring the development of guidelines from ICAO on the reduction of carbon dioxide emission from aircraft operations and conveyed the guidelines to the industry.

Measures Taken by Airlines

Airlines have taken the initiative to retire and replace old aircraft with new models which are more fuel efficient hence less emissions. Apart from modernization of aircraft fleet, airlines also endeavour to reduce emissions through reduction of aircraft weights, better maintenance and improved flight planning and management.

Measures Taken by CAD

Being the air navigation services provider, CAD has from time to time reviewed air routes and air traffic management arrangements by making reference to the latest ICAO guidelines. Taking advantage of the latest development in satellite-based navigation technologies, CAD has conducted enhancements of the air route system which enabled shortened travelling distances and allowed more aircraft to fly at optimum and fuel efficient altitudes, thereby achieving fuel savings and a reduction of carbon dioxide emission.

CAD would continue to keep in view the development of the latest ICAO flight procedure criteria, progressively apply more advanced aviation technologies as appropriate and closely work with other air traffic control authorities and airline operators for further enhancing the air route system in the Hong Kong Flight Information Region.

Carbon Emission Certification

New ICAO requirement for aircraft was published in July 2017, relating to Standards and Recommended Practices on certification of carbon emissions of aircraft. New aircraft type in the future will have to comply with the requirement.

4 | Green Measures in Other Aviation Related Operations

CAD recognizes the importance of environmental protection. We have implemented various green measures in aviation related operations. We would continue to explore means to infuse green measures into our operations to maintain sustainability of civil aviation.

Standardized Forms for Various Tariff and Flight Applications

Use of standardized forms for various types of applications has reduced the consumption of paper and processing time in the Air Services Office. As a result of the liberalization and change of approval mechanism of the Passenger and Cargo Fuel Surcharges respectively, consumption of paper has been greatly reduced. The use of e-filing as a platform for submission of forms and various relevant information continue to contribute to reduction of paper consumption, which also greatly enhances readability and accuracy of the information provided.

CAD Safety Library

The CAD Safety Library launched in December 2016 provides a centralised electronic platform for easy storing, sharing and distribution of documents accessible through office desktop or laptops connected to CAD intranet. As end 2018, around 300 documents from divisions have been uploaded on this electronic platform, including departmental and divisional policies, operating procedures and guidance manuals, and links to published documents. The CAD Safety Library helps to promote sharing and exchange of safety information and to reinforce the learning and safety culture within CAD. It is also a measure to support environmental protection by reducing the need for printouts and paper copies.



Figure 4-1:
Layout of CAD Safety Library

Electronics Submission / Approval

Use of Electronic Flight Bags

CAD has promulgated to airlines that upon the fulfillment of safety related requirements, most document records, manuals and licenses that used to be carried on board aircraft or submitted to CAD in paper form, can be provided through electronic means. The application form for Electronic Flight Bag Operational Approval is available on the CAD website. This practice greatly replaces and reduces paper-based references found in the carry-on flight bag in the past, including various operations manuals, maps and navigational charts. With the use of electronic flight bags which brings the technological advances of computer information delivery to the airplanes, flight crews can perform different management tasks more efficiently with less paper.

Currently, Cathay Pacific Airways, Cathay Dragon, Hong Kong Airlines, Hong Kong Air Cargo Carrier and TAG Aviation Asia Limited obtained CAD's approval to use Electronic Flight Bags for various applications, including document viewer for operational manuals, maintenance manual and navigation charts, aircraft technical log and performance calculations. These applications replace the paper copies onboard and associated hard copy revisions.



Figure 4-2: Electronic Flight Bag

Application for Guided Tours of the Education Path

In 2018, the Education Path in the CAD Headquarters welcomed more than 15,000 visitors from schools, charities, professional bodies and social groups, etc. Any individual or group interested in a guided tour of the CAD Education Path may download the application form from CAD website and submit the duly completed form by electronic means.



Figure 4-3: Education Path

Electronic Flight Strip System

For a long time, paper flight progress strips had been used in the Air Traffic Control Tower (ATCT) and the Air Traffic Control Centre (ATCC) in Hong Kong. Electronic Flight Strip System, which displays flight data on a screen and allows data management by electronic means, was first commissioned in December 2012 in ATCT. With the commissioning of the new Air Traffic Management System (ATMS) in November 2016, paper strips in both

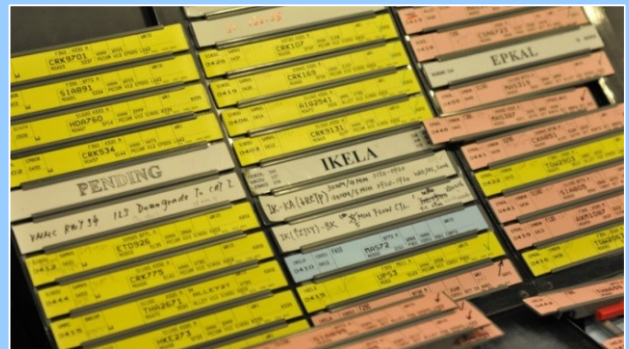


Figure 4-4: Traditional paper flight progress strips

ATCT and ATCC have been totally replaced by the Electronic Flight Strip System. Based on the current air traffic volume handled by ATCC, it is estimated that more than 3,510,000 paper strips (equivalent to about 292,500 sheets of A4 size paper) could be saved every year.

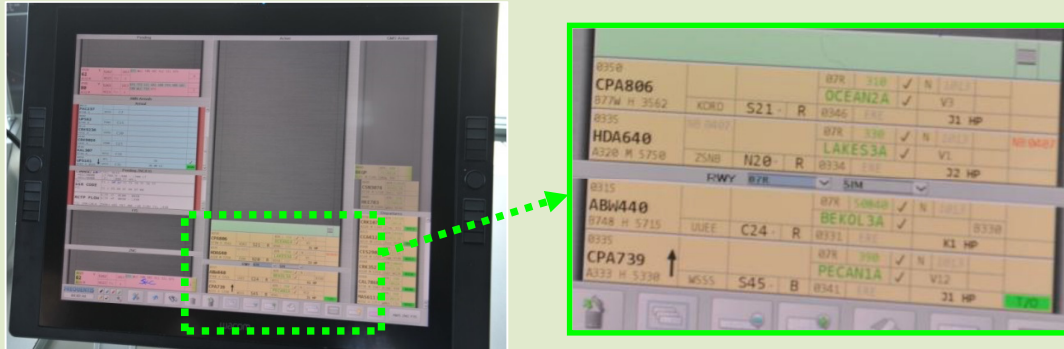


Figure 4-5: Display of the Electronic Flight Strip System

Online Promulgation of Divisional Documents

The Air Traffic Management Division of CAD has launched a website with secured access limited to divisional staff, named as the “ATMD Information Dissemination Website”, since 1 September 2014. The website was at first used to disseminate roster information to colleagues through the internet. Since December 2014, the function of the website was extended to house and disseminate training materials, airport circulars, divisional information circulars and materials of professional interest aiming to replace the traditional means of distributing hard copies.

In order to reap further environmental benefits, since 2015, the use of the website has been extended to provide online access to divisional reference documents and their updates which used to be disseminated by CD-ROMs. Since the implementation of this initiative, it is estimated that about 2,000 CD-ROMs have been saved each year.

Since August 2017, the distribution of internal Administrative Memorandum has been digitised to enhance the operational efficiency while being more environmentally friendly. With the significant reduction of hard copies to be distributed, it is estimated that about 10,000 sheets of A4 size paper have been saved each year.

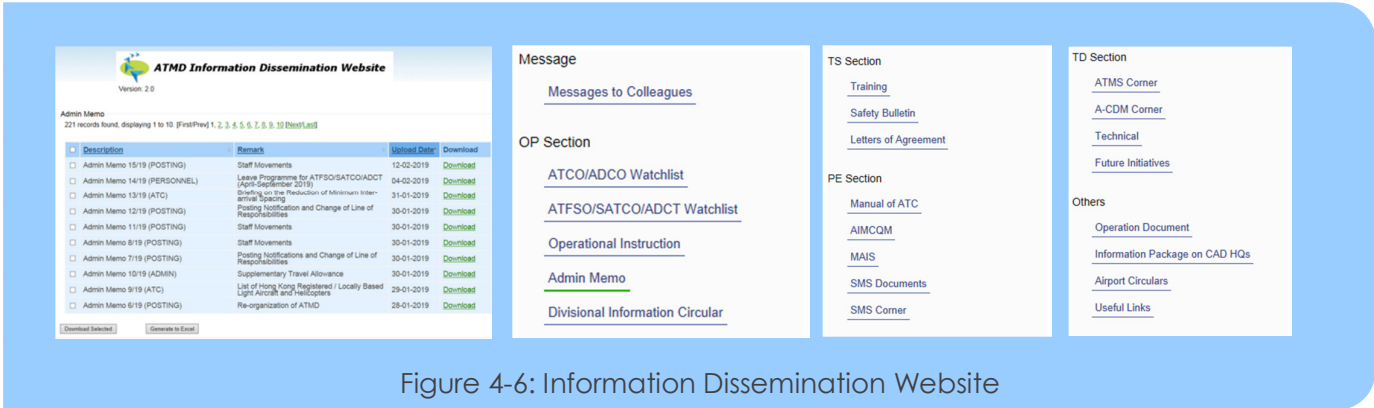


Figure 4-6: Information Dissemination Website

Aeronautical Information Management System

With the commissioning of the Aeronautical Information Management Centre in the CAD Headquarters in December 2015, a new Aeronautical Information Management System has replaced traditional paper based information management. Aeronautical data is stored in the new system in digitised and structured format, which enables further processing and distribution by electronic means. The new system not only enhances the accuracy, efficiency and quality of information dissemination, but also helps reduce paper consumption.

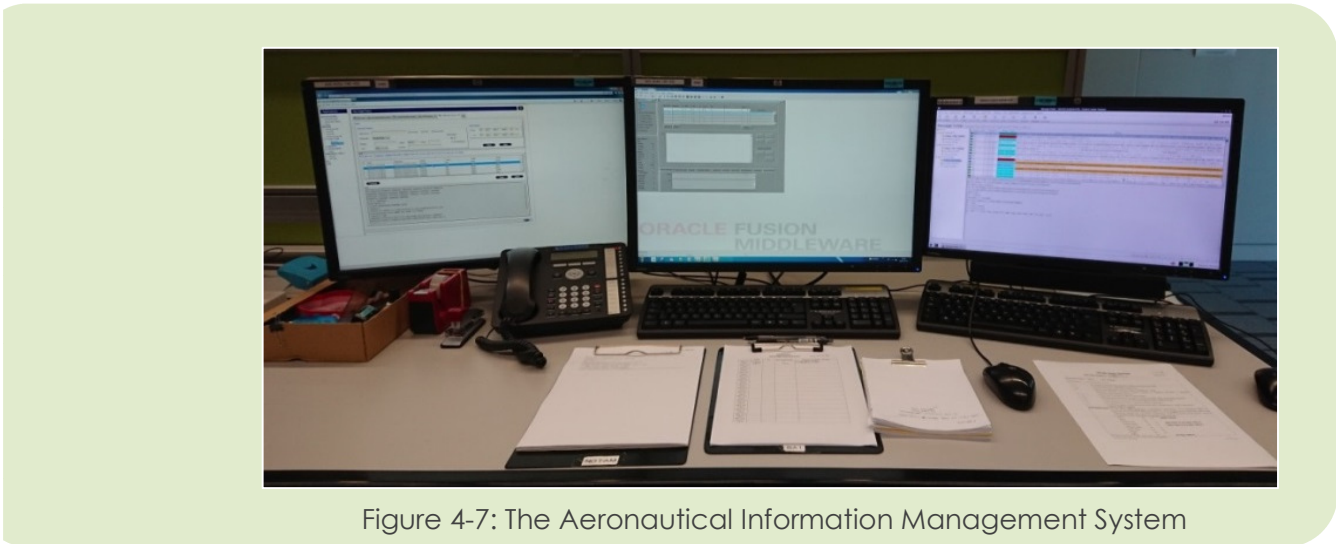


Figure 4-7: The Aeronautical Information Management System

Graphical Presentation of Aeronautical Information

Before implementation of the new system, when graphical presentation of information on special areas affecting flight operations was required, our staff would make hard copies of the charts, then manually plot the areas on the charts after detailed measurement. At times, several drafts were made during the plotting process and several sheets of charts were required when the area covered more than the extent of one chart. Subsequently, the plotted paper chart would be sent out by fax or delivery. Not only did the process require much time and effort, it was also not environmentally friendly.

Provisions under the New System

The new system has a graphical report tool which enables operators to input the geographical coordinates of areas concerned and instantaneously display the areas on the screen. Operators can select to display essential elements in the background to make a clear presentation in a paperless environment. An electronic copy of chart can be easily generated and sent out via email efficiently. It is much more user-friendly and can save paper.

Taking advantage of the functionality of the new system, CAD will continue to explore new initiatives to disseminate and exchange information in an environmentally friendly manner.

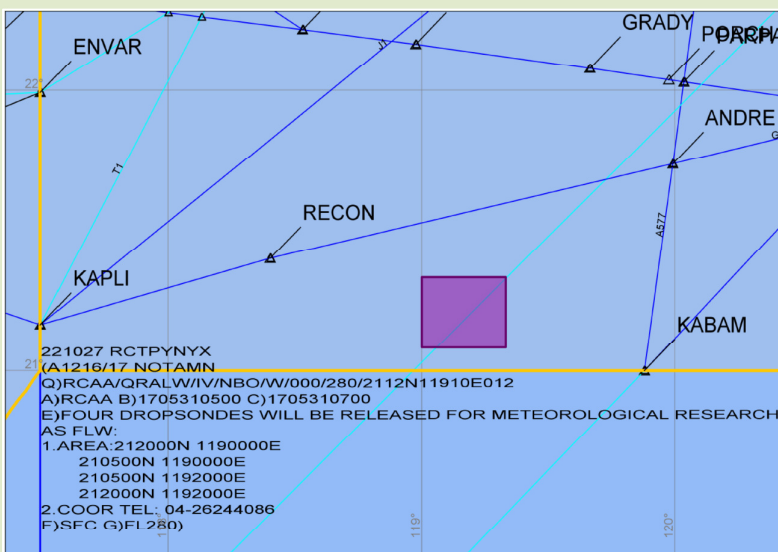


Figure 4-8: Graphical Presentation of Aeronautical Information

Paperless Aeronautical Publications of Hong Kong

In support of a greener aeronautical information management, CAD has committed to the transition to the digital data-based electronic publication of aeronautical information and discontinued the issuance of hard copies of Aeronautical Publications (including Aeronautical Information Publication (AIP), AIP Supplement and Aeronautical Information Circular) of Hong Kong since 16 August 2018. Since then, these Aeronautical Publications are only available in electronic form accessible in the Hong Kong Aeronautical Information Services website.

Based on the number of subscribers to the hard copies before the discontinuation, it is estimated that more than 30,000 sheets of A4 size paper were saved between August and December 2018.

5 | Green Housekeeping

CAD has been implementing a number of housekeeping measures in daily office operations to encourage energy conservation, paper conservation, waste collection and recycling, proper disposal of environmentally hazardous waste, green procurement and environmental awareness among all staff.

Energy Conservation

Daily Energy Saving Measures in Housekeeping

To minimize the consumption of energy in our daily office operations, the following green measures have been adopted in CAD buildings:-

- Continuing to follow the Government recommended summer air conditioning setting of 25.5°C and use electric fans to improve air circulation and provide better staff comfort if necessary;
- Continuing the practice of switching off any air conditioning, interior lights, exterior lights, decorative lights, lifts, escalators, digital signage system and video wall, etc. when not in use;
- Fine-tuning the external essential lighting on-off hours periodically to optimise against seasonal changes in light / dark hours;



Figures 5-1: De-lamping in common area



Figure 5-2: Replacing obsolete and less energy efficient tubes with T5 tubes

- De-lamping in corridors and common areas;
- During non-peak office hours, switching off some lifts in Air Traffic Control Building, Office Building and Facilities Building of CAD Headquarters and Back-up Air Traffic Control Complex (BATCX) for energy-saving;
- Outside normal office hours, operating limited lifts; lighting under night mode and suspending service of escalators in the Office Building of CAD Headquarters;
- Encouraging staff to use staircases instead of lifts;
- Installing energy-saving timer devices in most share-used printers and photocopiers to prevent the consumption of electricity in standby mode during non-office hours;
- Checking lights and electrical appliances during security patrol outside office hours to ensure that they are switched off when not in use;
- Displaying notices in all meeting / training rooms to remind users to switch off lights and all electrical appliances before leaving. Users will be reminded if necessary;



Figure 5-3: A photocopier on energy-saving mode

Tips for a Green Office		
DO MORE	Paper Saving	DO LESS
<ul style="list-style-type: none"> ⊗ Using electronic communication ⊗ Using both sides of paper for printing and photocopying ⊗ Reusing envelopes for internal circulation ⊗ Using blank side of used paper for drafting ⊗ Using screen projector during meetings/briefing/training, reducing hard copies ⊗ Collecting waste paper for recycling 	<ul style="list-style-type: none"> ⊗ Using paper for circulation and communication ⊗ Tabling hard copies of agenda/notes of meeting/discussion paper/training notes ⊗ Mixing waste paper with other rubbish 	
Energy Saving		
<ul style="list-style-type: none"> ⊗ Using the stairs ⊗ Operating electric fans to enhance air circulation ⊗ Lowering /closing venetian blinds to avoid direct sunlight ⊗ Dressing lightly in summer ⊗ Procuring energy efficient office equipment ⊗ Switching off the lights and office equipment; unplugging equipment chargers and adapters when not in use 		<ul style="list-style-type: none"> ⊗ Taking lifts ⊗ Lowering the temperature of the air conditioning ⊗ Switching on electric heater ⊗ Leaving electric equipment, chargers and adapters in standby mode for a long period
Water Saving		
<ul style="list-style-type: none"> ⊗ Turning off the tap after use ⊗ Conserving drinking water 		<ul style="list-style-type: none"> ⊗ Overly using running water for washing ⊗ Getting drinking water in excess of your need
Waste Reduction/Recycling		
<ul style="list-style-type: none"> ⊗ Requesting less portion of food if necessary to avoid wastage ⊗ Using your own cup in attending meetings ⊗ Using refillable pens and mechanical pencils ⊗ Putting recyclable wastes into recycling bins 		<ul style="list-style-type: none"> ⊗ Ordering too much food ⊗ Using one-off office stationery/tableware ⊗ Using excessive paper towel for hand drying
Optimizing Departmental Transportation		
<ul style="list-style-type: none"> ⊗ Taking public transportation ⊗ Grouping officers going to the same/nearby locations with a view to minimizing use of departmental vehicles ⊗ Taking the scheduled shuttle service 		<ul style="list-style-type: none"> ⊗ Excessively using departmental transportation ⊗ Requesting additional trips
<small>Administrative Division Civil Aviation Department July 2015</small>		

Figure 5-4: Tips for a green office

- Installing solar films in strategic locations to reduce sunlight and heat;
- Installing motorized blinds at the atrium of the CAD Headquarters to shield sunlight and heat on sunny days;
- Introducing green installation during the building construction, e.g. installing photovoltaic panels on the rooftop of CAD Headquarters. In 2018, the electricity generated by the panels was 17,223 kWh;
- Maintaining a green roof to help lower temperature on the top floor;
- Reviewing the occupancy patterns in CAD Headquarters before the summer season to optimize the operation schedules of air-conditioning supply for different zones for further reduction of the operating hours of air-conditioning and the overall cooling (energy) demands; and
- The operation schedule of the video wall at CAD Headquarters has been reviewed to optimize the energy saving.



Figure 5-6: Photovoltaic panels on the rooftop of CAD Headquarters



Figure 5-5: Motorized blinds at the atrium of CAD Headquarters shield sunlight effectively

Electricity Consumption of CAD Buildings

Electricity consumption of our government buildings in financial year (FY) 2018-19 as compared with FY 2013-14 as baseline is tabulated below:-

	Electricity consumption (kWh)	Electricity consumption under comparable operating conditions (kWh)
FY 2013-14 (baseline)	26,590,970	Not applicable
FY 2014-15	27,090,851 (+1.9%)	27,103,123 (+1.9%)
FY 2015-16	26,080,028 (-1.9%)	26,094,576 (-1.9%)
FY 2016-17	24,370,751 (-8.3%)	24,384,915 (-8.3%)
FY 2017-18	22,752,437 (-14.4%)	24,061,073 (-9.5%)
FY 2018-19	21,757,442 (-18.2%)	24,054,264 (-9.5%)

Remarks: (1) Figures in brackets indicate percentage change compared with the baseline.

(2) The change in operating conditions is mainly the change in accommodation occupied by CAD in the past years.

As set out above, the electricity consumption of our government buildings in FY 2018-19 has decreased by 9.5%, when compared with FY 2013-14 (baseline), under comparable operating conditions. This was mainly due to our effective implementation of energy-saving initiatives.

Carbon Audit and Energy Audit

A consultant was appointed in 2015 to conduct energy audits for the major CAD premises including the CAD Headquarters, Air Traffic Control Complex (ATCX) and BATCX. The Energy Utilisation Indices (EUIs)¹ of CAD Headquarters, ATCX and BATCX in FY 2013/14 were 1,393, 2,906 and 8,306 MJ / m² / annum, respectively. The consultant reports issued in 2016 recommended that the green measures adopted by CAD should be continued.

¹ EUI is the annual energy consumption per unit area.

As specifically mentioned in the energy audit reports, the following energy saving initiatives are recommended to be implemented/maintained based on site conditions:-

- Keeping temperature setting to 25.5°C for all air-conditioning installation;
- Labelling zone control plans near the switches;
- Lowering or closing the blinds to avoid direct sunlight;
- Switching off the electrical appliances when the facility is unoccupied; and
- Keeping lights off alongside windows, as far as practical.

Following the first in-house carbon audit in 2017, CAD conducted another carbon audit in 2018. The results are reported in the table below:-

Year	Greenhouse Gas Emission per floor area (kg of CO ₂)		
	CAD Headquarters	ATCX	BATCX
2017	180	310	1,230
2018	190	220	1,250

Energy Optimization System

Energy Optimization System (EOS) for the central air conditioning system in CAD Headquarters was installed in 2015 and commissioned progressively in 2016. Since then, the EOS operated smoothly with very promising performance of energy saving. In 2018, CAD achieved an estimated yearly saving of some 750,000 kWh, equivalent to a reduction of over 400 tons of greenhouse gas emission per year.

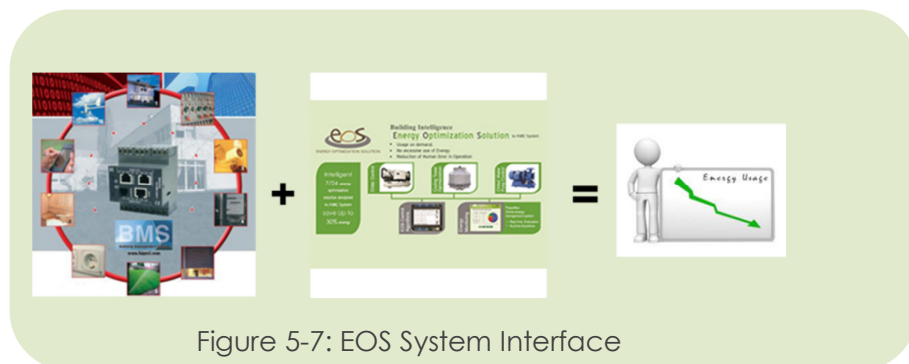


Figure 5-7: EOS System Interface

Paper Conservation

Daily Paper Saving Measures in Housekeeping

We promote the “4-R principle” in paper conservation as summarized in the following diagram.

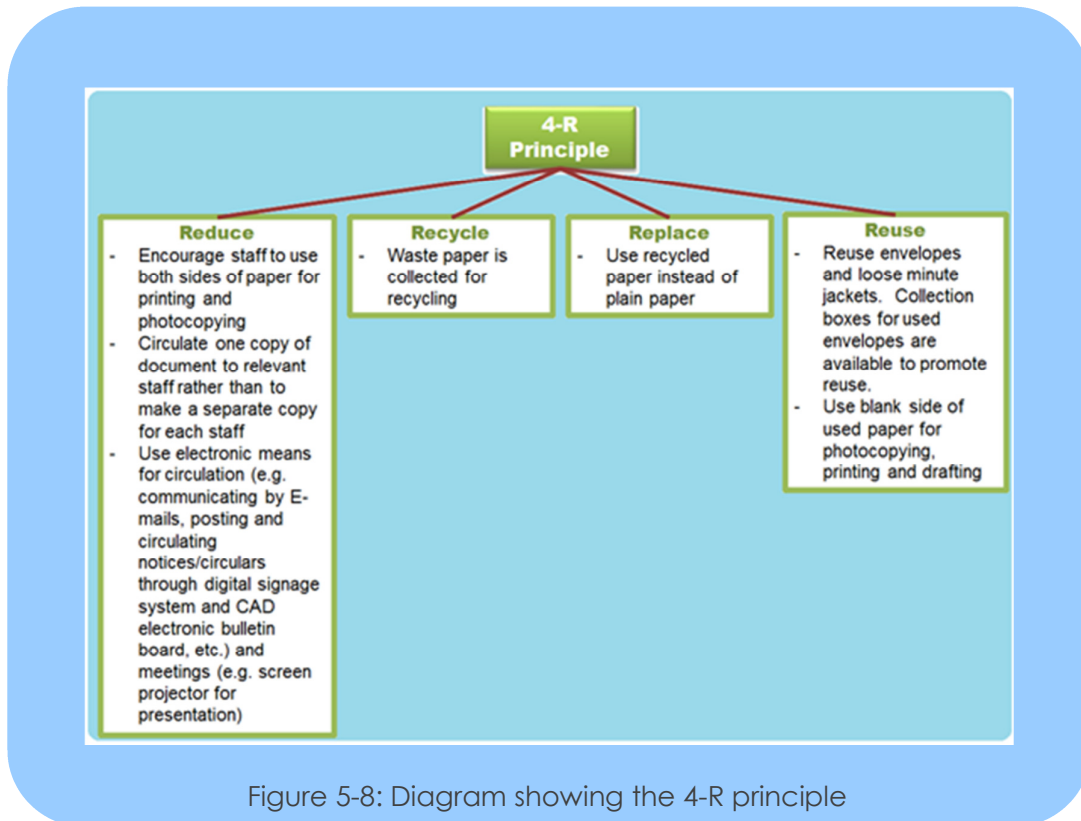


Figure 5-8: Diagram showing the 4-R principle

Measures on Paper Conservation

Apart from the daily housekeeping, we adopt the following arrangements in order to reduce the use of paper:-

- No longer producing hardcopies of the CAD Annual Report since 2017. This arrangement has saved about 28,000 sheets of A4 paper per year;
- Posting notices at paper towel dispensers to encourage staff to use less paper towel; and
- Circulating newspaper cuttings by electronic means instead of hardcopies. It is estimated that about 46,000 sheets of A4 paper were saved in 2018.

Paper Consumption

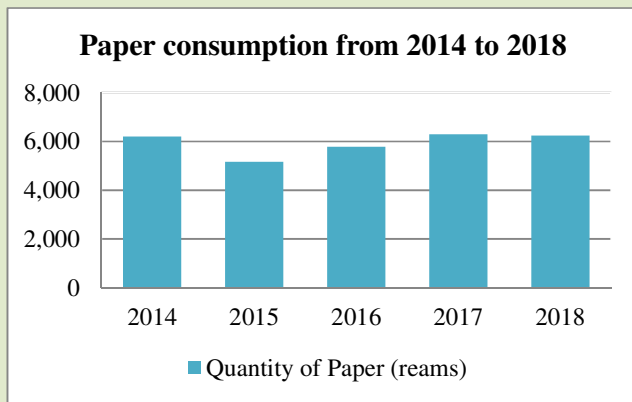


Figure 5-9: Paper consumption from year 2014 to 2018

In 2018, we consumed 6,245 reams of paper, which recorded a decrease of about 0.78% against the consumption in 2017, despite we have conducted a comparable scale of recruitment exercises in 2018. This demonstrated that the bit by bit effort in daily paper conservation by individual staff has paid off. Staff are encouraged to keep up with the good practice.

Waste Reduction, Collection and Recycling

Recycling Bins to Collect Waste Paper, Plastic Bottle, Metal Can and Glass Bottle

We collect waste paper, used plastic bottle, metal can, glass bottle and rechargeable batteries, etc. for recycling. Recycling bins are placed in common areas to facilitate disposal by staff members and visitors. The materials collected are delivered on a regular basis to recycling operators. The table below shows the amount of recyclables collected in 2018.

Recyclables	Amount Collected
Waste Paper	2,550.5 kg
Plastic	29 kg
Metal	27.5 kg
Glass Bottle	0 pcs
Rechargeable Battery	0 pcs



Figure 5-10: Recycling bins

Food Waste Collection and Decomposition System

Food waste is one of the major solid wastes in Hong Kong. Reduction of food waste is therefore crucial for minimizing the load of landfills. To work towards this goal, a food waste decomposition system had been installed in CAD Headquarters.

Food wastes are collected in the CAD Staff Canteen at CAD Headquarters, and then are disposed of into the food waste decomposition system. During the decomposition process, the food wastes are converted by enzyme into liquid, part of which is used as a natural fertilizer for the vegetation at CAD Headquarters and the remaining is discharged as an effluent. In 2018, we collected about 3.1 tonnes of food waste, which recorded a 26% decrease when compared with 2017.

Reduction of Waste in Staff Canteen

Besides handling the food waste collected through the food waste decomposition system, the Staff Canteen has taken actions to reduce other solid wastes through the following means:-

- Promotion of No Straw Campaign;
- Ban the use of poly-foam food containers;
- Encourage customers to bring their own food container and avoid the use of disposable utensils;
- Encourage customers to request a smaller portion of rice, thus reducing the chance of creating food waste; and
- Publicity materials are posted in the Staff Canteen to remind customers to reduce the amount of leftover food and avoid the use of disposable plastic food container and utensils.



Figure 5-11: Operation of the food waste decomposition system in CAD Headquarters Headquarters



Figure 5-12: Types of food waste that can be processed



Figures 5-13 and 5-14: Publicity displayed in CAD Staff Canteen for the No Straw Campaign and encouraging customers bringing their own food container and utensils

Food Wise Charter

We have signed the Food Wise Charter implemented by the Environmental Protection Department since 2016. Upon joining the Charter, measures on food waste reduction are being reviewed regularly. Communication among the management, staff and the Staff Canteen operator is maintained through the Canteen Sub-committee meetings.

Collection of Rain Water Recycling for Irrigation

Rain water and air-conditioning condensate water is recycled for the irrigation system installed at CAD Headquarters. The following table shows the saving of irrigation water in 2018:-

Buildings of CAD Headquarters	Facilities Building	Office Building	Air Traffic Control Building
Annual Irrigation Consumption (L)	5,308,000	875,000	2,120,000
Annual Recycled Water Collected for Irrigation (L)*	1,743,000	123,000	367,000
Percentage of Saving	33%	14%	17%

* Including the water recycled from the cooling tower.

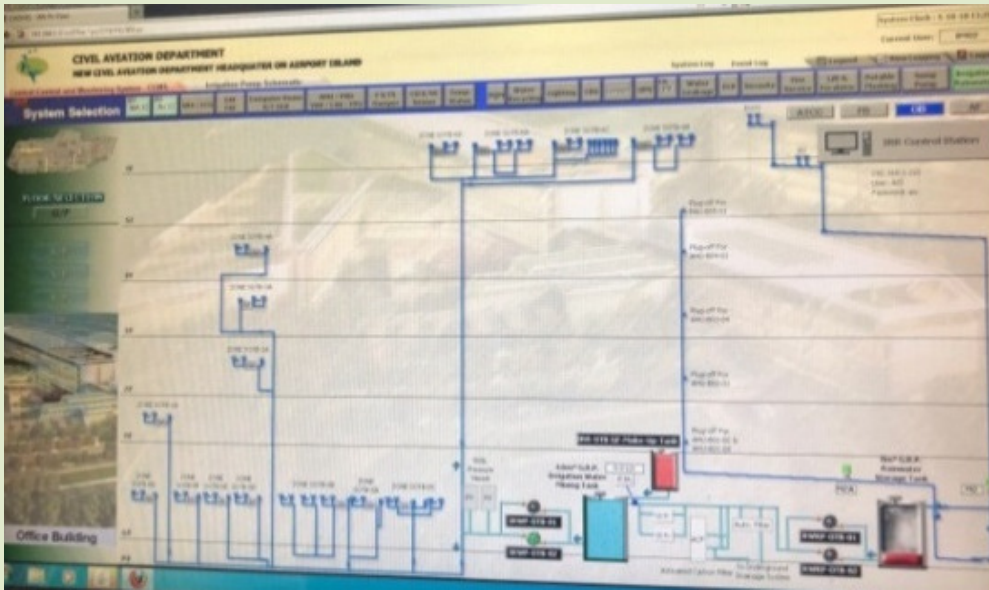


Figure 5-15: Rainwater Recycling System

Water Saving Measures

Fresh water is a precious natural resource. We encourage our staff to actively reduce their water consumption by the following:-

- For seminars and conferences involving guests, water dispensers are placed in the meeting venues for their refilling. Bottled water is not provided as far as practicable; and
- Notices are posted in pantries to remind colleagues to save water.

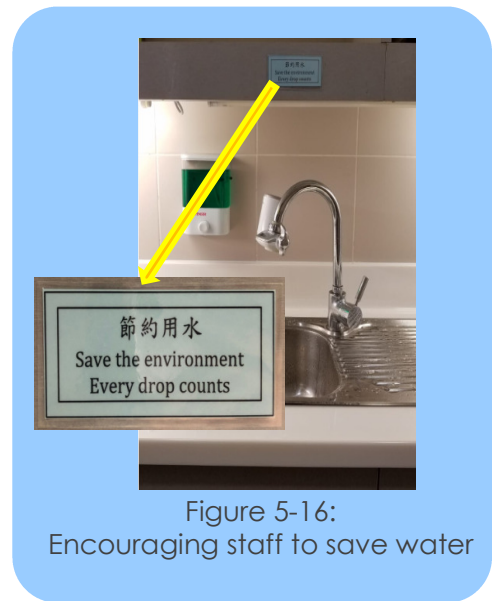


Figure 5-16: Encouraging staff to save water

Bring Your Own Cup

- We encourage colleagues to bring their own cups when attending meetings, in order to minimize the waste generated from disposable paper / plastic cups.
- To support waste reduction, the caterer of departmental events is requested to provide reusable food utensils instead of using disposable tableware.

Reduction in Procurement of Newspapers

- To support paper reduction, circulation of newspaper cutting in electronic means is implemented. With this initiative, the procurement of hard copy newspapers was greatly reduced. The Library has achieved reduction of hard copy newspaper by 10% in 2018.

Green Procurement

CAD follows the guidelines as set out in the Government's green procurement policy and avoids procuring single-use disposable items. We purchase items that are durable, energy-efficient and recyclable. Below are some examples of green procurement measures implemented in our Department:-

- Procuring operation equipment, office equipment and other electrical appliances having an energy label;
- Choosing green products such as refillable ball pens, mechanical pencils and recyclable laser printer cartridges;
- Reviewing the operational need against monthly supply items regularly, particularly for those items with expiry dates;
- Avoid using items that are environmentally unfriendly, for example, correction fluid and batteries containing mercury;
- Incorporating term requesting Contractor to follow green guidelines in new cleansing contract; and
- Following the general guidelines on matters relating to purchase and disposal of regulated electrical equipment (REE), e.g. air conditioner, refrigerator, computer and printer, etc. issued by the Environmental Bureau.

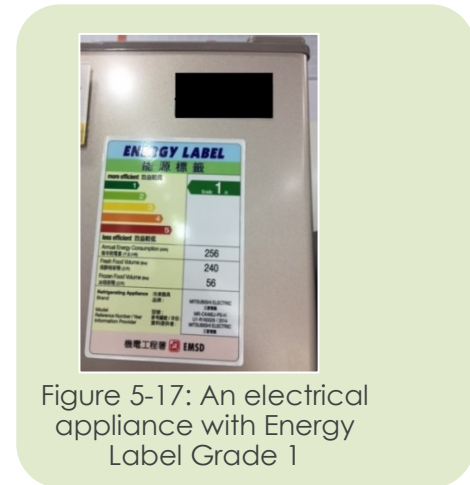


Figure 5-17: An electrical appliance with Energy Label Grade 1

During procurement, we recommend the following green measures to the suppliers for their preparation of tendering documents and performing the

contract:-

- All documents printing on both sides and on recycled paper, avoiding paper that exceeds 80 gsm;
- Avoiding use of plastic laminates, glossy covers or double covers;
- Using single line spacing and avoiding excessive space in the margins and in between paragraphs;
- Minimizing the use of packaging material; and
- For those carton boxes used for packing, made from 100% recovered fibre is preferred, given that it is strong enough for storage, stacking and transit.

Electric Vehicles

To ameliorate the air pollution problems in Hong Kong, electric vehicles are becoming more widely used in the territory. CAD commenced to replace our petroleum saloon vehicles with electric vehicles since 2013. At present, among our existing fleet of six saloon vehicles, two-third of them are electric vehicles. We will replace one more petroleum vehicle with an electric vehicle in 2019. Furthermore, vehicle maintenance checks are arranged regularly to ensure the vehicles run in the most energy efficient condition.



Figure 5-18: The electric vehicles of CAD

Training and Communication

Environmental Management Committee

The Environmental Management Committee (EMC) was chaired by the Departmental Green Manager and comprised of representatives from all divisions of the Department. It was established to recommend environmental goals, policy objectives and targets and to promote environmentally responsible management within the Department. To achieve this, the Committee met regularly to consider green initiatives, promote staff awareness, monitor and report on the implementation of green measures.

Appointment of Green Managers and Energy Wardens

A green manager was nominated from each division to coordinate and oversee green management issues. Energy Wardens were also appointed to promote and remind staff to comply with green housekeeping and energy-saving measures in the workplace on a day-to-day manner. In 2018, there were a total of 38 Energy Wardens for CAD Headquarters, ATCX and BATCX. Regular briefings were provided to them in order to enrich their relevant knowledge.



Figure 5-19: CLP Power Hong Kong Limited conducted an energy conservation talk on 4 July 2018



Figure 5-20: Group photo at the briefing on 4 July 2018, attended by the Departmental Green Manager, EMC Members, Green Managers and Energy Wardens

Energy Conservation Talk

To raise staff's awareness and refresh their knowledge on energy conservation, we continue to invite CLP Power Hong Kong Limited to conduct an energy conservation talk. Useful energy saving tips both in the workplace and household environment were introduced. Participants gained valuable advice in the talk. We hoped that they would bring the information to others who had not attended the briefing as well as their family members.

Green Tips to all CAD Staff

A Green Corner was established in the CAD electronic bulletin board. It serves as a platform to share among CAD staff guidelines related to environmental management and green tips, such as circulars and pamphlets on energy saving measures, waste avoidance practices in office, etc. The related information would also be re-circulated to staff by electronic means regularly. Divisions were encouraged to post up the green tips and housekeeping measures at prominent places in the office area.

Training for New Recruits

Green management has been included in the orientation programme for new recruits since 2017. This would ensure a good understanding and compliance to departmental green policies and practices among them once they joined the Department.

Recognition

Indoor Air Quality

We support the commitments under the Clean Air Charter. As mentioned in the previous chapters, we have been implementing measures to reduce emissions from our daily operation.

The Indoor Air Quality (IAQ) of CAD premises has continued to be assessed annually to monitor the situation. In 2018, the CAD Headquarters and the BATCX obtained the "Excellent Class" and "Good Class" of IAQ Certificate respectively. The renewal of IAQ Certificate for ATCX was suspended in 2018 as the premises are undergoing a large-scale refurbishment exercise.



Figure 5-21 and 5-22: The IAQ Certificates obtained in 2018

Hong Kong Awards for Environmental Excellence and Hong Kong Green Organisation Certificate

The Hong Kong Awards for Environmental Excellence (HKAEE) aims to encourage businesses and organisations to adopt green management; benchmark their commitments towards best practices within their sectors; and recognise and acknowledge the efforts of leading businesses and organisations.

CAD won the Certificate of Merit under Public and Community Services Sector in the 2018 HKAEE as a recognition of our efforts in green leadership, environmental communication and training, management for continual improvement, promotion and implementation of a series of environmental measures.



Figure 5-23: Certificate of Merit obtained in the 2018 Hong Kong Awards for Environmental Excellence

Views and Suggestions

CAD Environmental Report in the previous years can be found in the CAD website (http://www.cad.gov.hk/english/er_report.html). We welcome comments and feedback from readers so that we can identify ways for improvements. You can provide your views and suggestions to us by the following means:-

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