



Civil Aviation Department Environmental Report 2019

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1 | Foreword

This Environmental Report covered the environmental performance of the Civil Aviation Department (CAD) in 2019.

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 of the following day 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 2019, 81% of arrival aircraft were able to approach from the southwest of the airport between midnight and 7 am of the following day under permissible conditions.

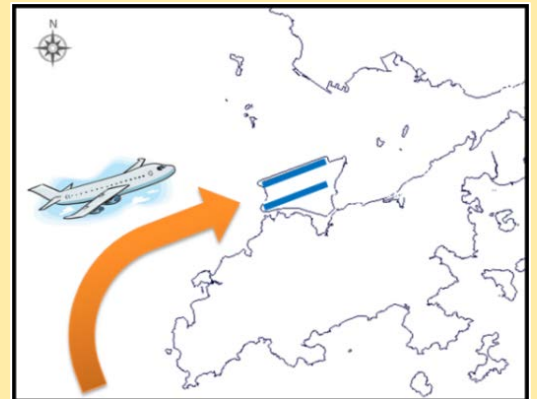


Figure 2-1: Route of arrival aircraft from southwest at night

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.

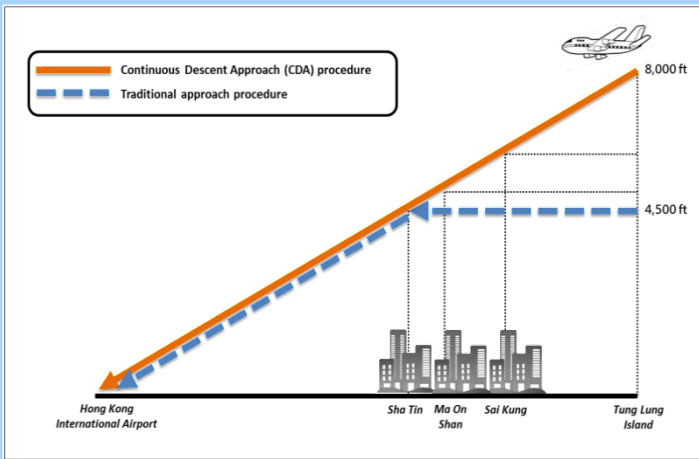


Figure 2-2: Diagram illustrating CDA procedure

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 of 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 2019, 98% of aircraft taking off to the northeast between 11 pm and 7 am of the following day were able to take this southbound route over the West Lamma Channel.

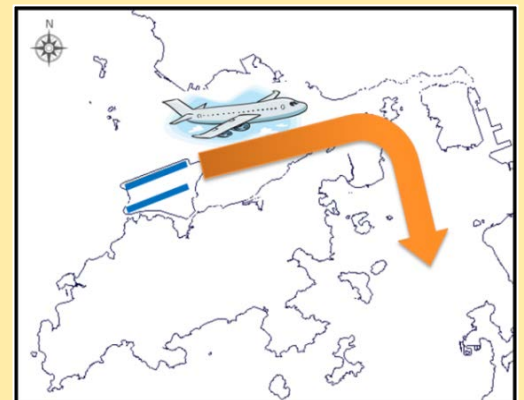


Figure 2-3: Route of departure aircraft to northeast at night

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

Apart from implementing the aircraft noise abatement operational procedures mentioned above, the CAD has prohibited aircraft not meeting the relevant aircraft noise standards from landing and taking off in Hong Kong.

Since 2002, aircraft that 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 land or take off in Hong Kong. Furthermore, starting from 2014, airlines are not allowed to schedule aircraft whose noise levels only marginally meet the Chapter 3 noise standards¹ to land and take off in HKIA.

Starting from March 2019, CAD has taken an initiative to impose more stringent requirements with additional operating restrictions on aircraft which do not comply with the noise standards stipulated in Chapter 4 of Annex 16 Volume I, Part II to the Convention on International Civil Aviation (“Chapter 4 noise standards”), or equivalent, to operate at the HKIA from 10 pm to 7 am of the following day.

¹ Marginally Compliant Chapter 3 (MCC3) aircraft are defined as subsonic jet aircraft which comply with the noise standards stipulated in Volume I, Part II, Chapter 3 of the Annex 16 to the Convention on International Civil Aviation by a cumulative margin of not more than 5 EPNdB.

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 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.

Measures Taken by Airlines

Airlines have taken the initiative to retire and replace old aircraft with new models which are more fuel efficient, quiet and more advanced in navigation technology 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.

Carbon Emission Certification

New ICAO requirement relating to Standards and Recommended Practices on certification of carbon emissions of aircraft was published in July 2017. New aircraft type certificates submitted on or after 1 January 2020 would have to comply with the requirement.

Carbon Offsetting and Reduction

ICAO decided in October 2016 to implement a Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) as one of the measures to contribute to carbon neutral growth from 2020 onwards. The scheme is expected to complement a broader package of measures to be implemented by the aviation sector including the technological advancement on fuel efficient aircraft, improvement on operational procedures to reduce fuel consumption and promotion of the use of sustainable alternative fuels. CAD has been making suitable preparation in consultation with stakeholders for the implementation of the scheme, and will closely monitor the development.

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. Applications pertaining to scheduled or non-scheduled air services permits and schedule changes via e-filing account for over 97% of these applications.

The screenshot displays the 'Create Seasonal Schedule Application' form within the 'Civil Aviation Department Air Traffic Statistics System'. The interface includes a navigation menu at the top with options like 'View', 'Application', 'Upload', 'Misc.', 'Report', 'Code Table', and 'Admin'. The user is identified as 'OOPT Operations Officer (OOPT)'. The form fields include 'Season' (Winter 2019 selected, Summer 2020 unselected), 'Operator (ICAO)', 'Service Type' (Sch Pax), and 'Operator Name'. Below these is a 'Flight Schedules' table with columns for Flight No., In-Out Flight Diff., Effective Period (From/To), DOP (Days of the Week), Aircraft Type, No. of Seats, Route (indicating ferry/technical stops), Local Time (STA/STD), and Next Date. A 'Remarks' field is provided at the bottom, along with 'Discard', 'Preview', and 'Save' buttons. A note at the bottom states: 'Note to users: The "Next Date" field is only available for use when the inbound and outbound flights are of the same flight no. and enter in the same line, which can indicate the outbound flight is operated on the next day(s).'

Figure 4-1: Layout of e-filing

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. At the end of 2019, around 350 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.

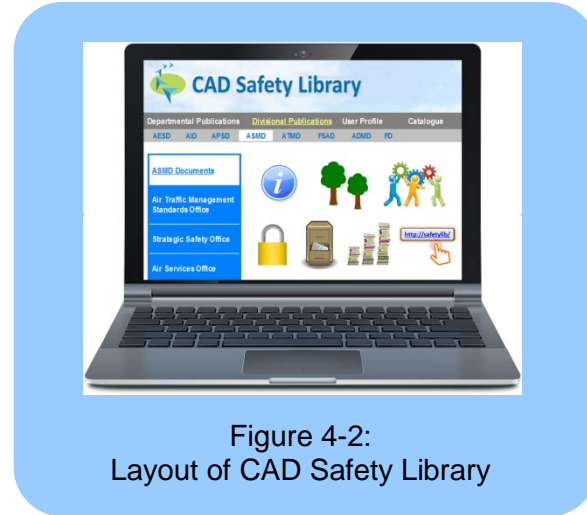


Figure 4-2:
Layout of CAD Safety Library

Electronics Submission / Approval

Use of Electronic Flight Bags

Airlines are required to carry on board aircraft a number of document records, including licenses, operations manuals, maps and navigational charts, etc. for flight crew's use. Traditionally, all these documents and information available for use on the aircraft have been in paper format. CAD promulgated to airlines that as much of these information are now available in electronic format, airlines could choose to carry them on board aircraft through electronic means. This practice greatly replaces and reduces paper-based references found in the carry-on flight bag in the past. 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. The application form for Electronic Flight Bag Operational Approval is available on the CAD website.

At the end of 2019, Cathay Pacific Airways, Cathay Dragon, Hong Kong Airlines, Hong Kong Air Cargo Carrier and TAG Aviation Asia Limited

have been approved by CAD to use Electronic Flight Bags. Applications approved for use include document viewer for operational manuals, maintenance manual and navigation charts, aircraft technical log and performance calculations. In 2019, Hong Kong Express Airways obtained CAD’s interim approval to conduct trials in using Electronic Flight Bags when operating flights.

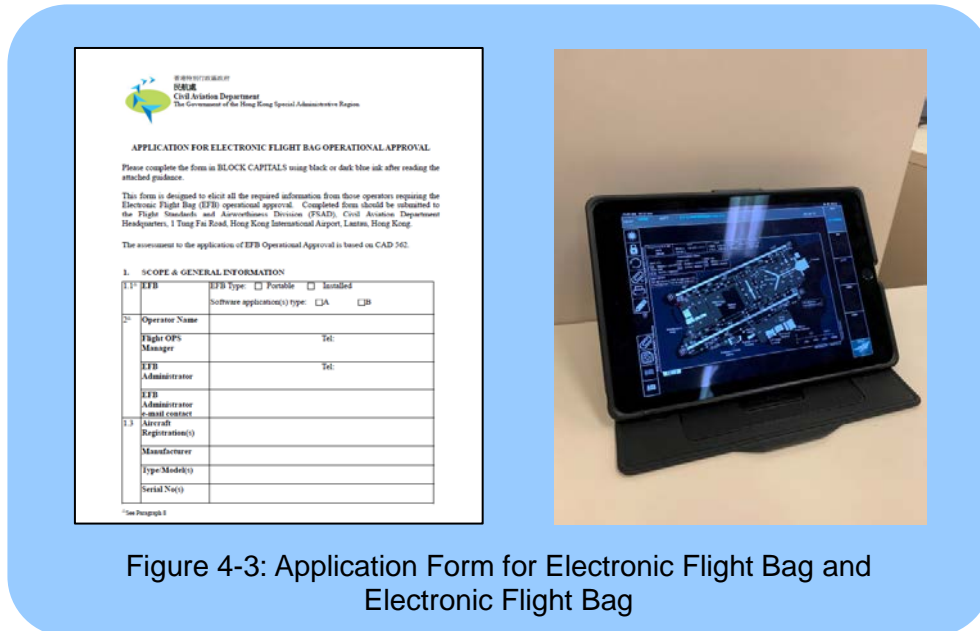


Figure 4-3: Application Form for Electronic Flight Bag and Electronic Flight Bag

Application for Guided Tours of the Education Path

In 2019, the Education Path in the CAD Headquarters welcomed nearly 14,000 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 4-4: 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 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 3,630,000 paper strips (equivalent to about 302,500 sheets of A4 size paper) could be saved every year.



Figure 4-5: Traditional paper flight progress strips

0320	07R	S0780	1021	A050	TSAT		
CRK107	PECANIA	✓	V10		CTOT		
A320 M 3306	ZJHK						
0225	07R	S0690	1021	A050	0443		
FIN102	BEKOL3A	✓			0500		
A359 H 5122	EFHK						

NR	DOTM1	V1	DOTM1	
HDAS10	F290	0350	0339	VHHH ZSHJ
A333H	0712	090		
NR	ENVAR	V3	ENVAR	
N9099H	F330	0354	0335	VHHH PKPC
9LEKH	3531	090		

Figure 4-6: 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.

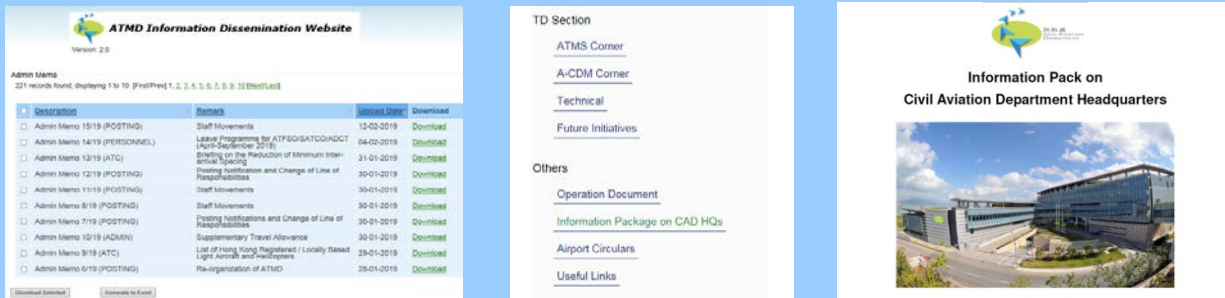


Figure 4-7: Information Dissemination Website

Aeronautical Information Management System

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

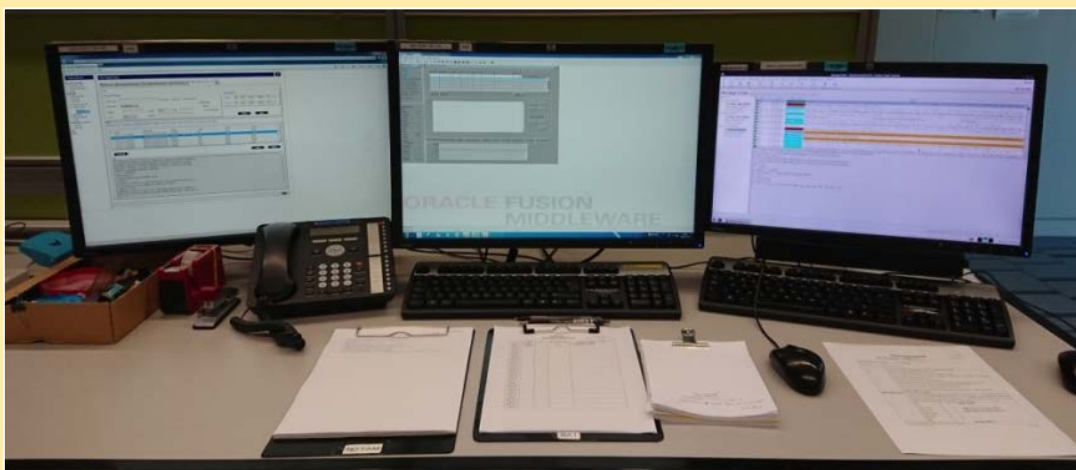


Figure 4-8: The Aeronautical Information Management System Workstation

Graphical Presentation of Aeronautical Information

Before implementation of the AIMS, 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 Aeronautical Information Management System

The AIMS 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 AIMS, CAD will continue to explore new initiatives to disseminate and exchange information in an environmentally friendly manner.

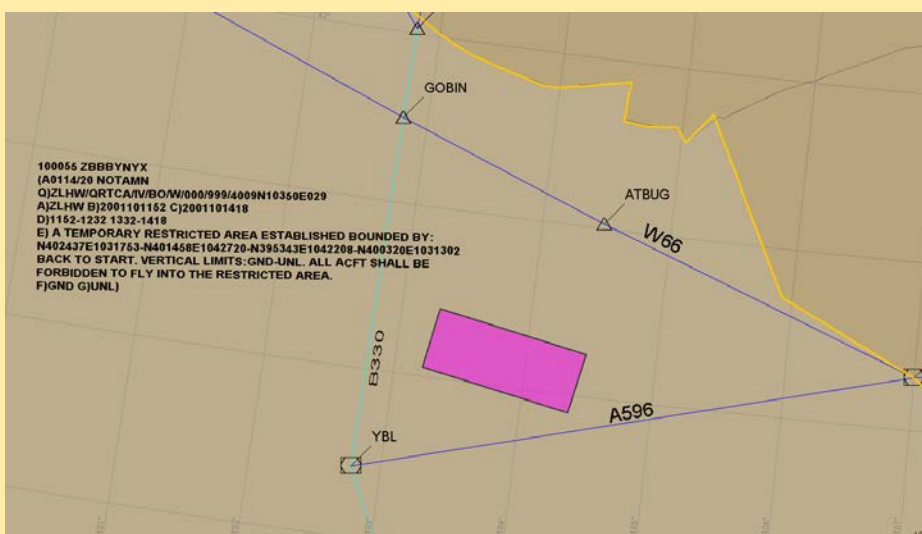


Figure 4-9: Graphical Presentation of Aeronautical Information

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. As further service enhancement, the Electronic Aeronautical Information Publication (eAIP), which is driven by a digital aeronautical information database, was launched on 28 March 2019. The eAIP, which is presented in HTML format, does not only provide better presentation and search functionality to enhance user experience, but also paves way for paperless exchange of aeronautical information in the future.

Based on the number of subscribers to the hard copies before the discontinuation, it is estimated that more than 72,000 sheets of A4 size paper were saved in 2019.

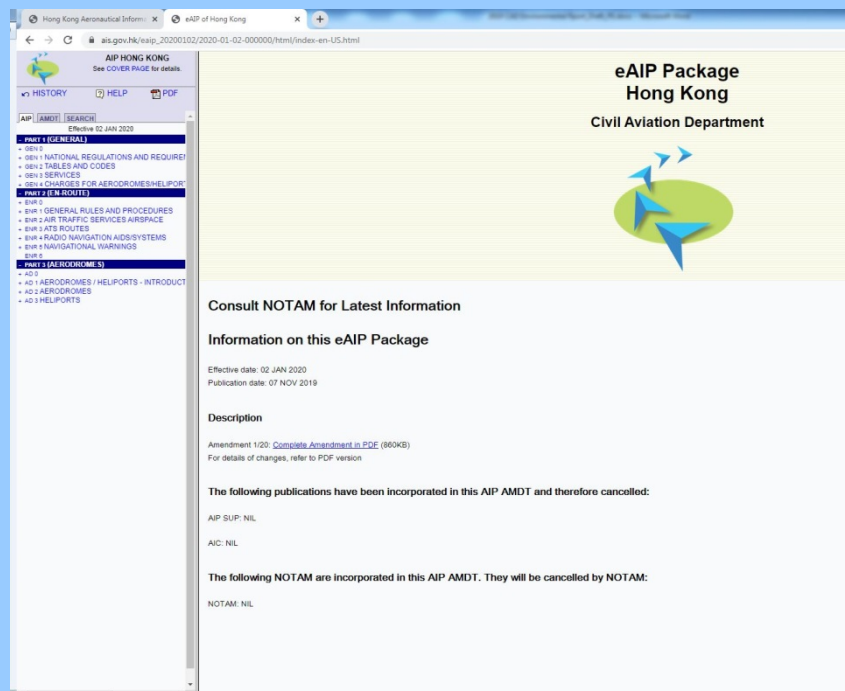


Figure 4-10: Electronic Aeronautical Information Publication (eAIP)

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 Backup 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



Figure 5-4: Encouraging staff to use staircases instead of lifts

- ❖ 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 2019, the electricity generated by the panels was 18,431 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: Green roof helps lower temperature on the top floor

Electricity Consumption of CAD Buildings

Electricity consumption of our government buildings in financial year (FY) 2019-20 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%)
FY 2019-20	22,812,055 (-14.2%)	24,160,110 (-9.1%)

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 2019-20 has decreased by 9.1%, 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)² 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

² EUI is the annual energy consumption per unit area.

in 2016 recommended that the green measures adopted by CAD should be continued. 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 has conducted annual carbon audits since then. The results are reported in the table below:-

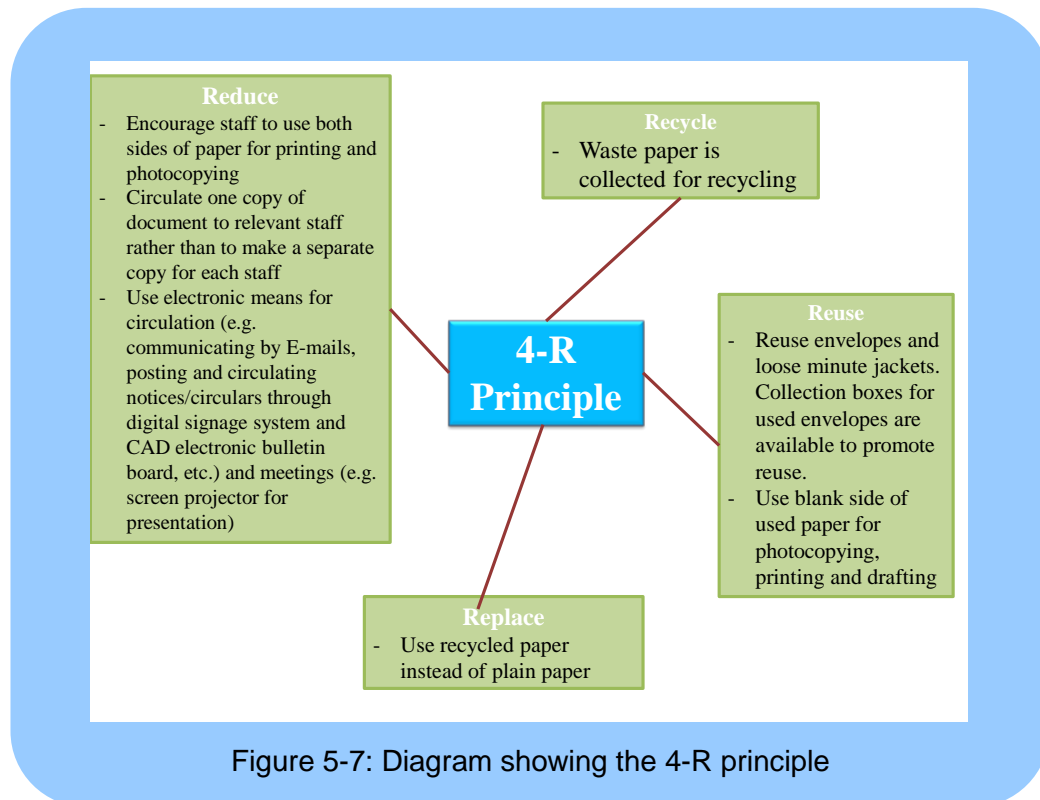
Year	Greenhouse Gas Emission per employee (tonnes of CO ₂)		
	CAD Headquarters	ATCX	BATCX
2017	7.74	77.39	24.84
2018	7.35	40.05	24.22
2019	6.78	36.24	22.04

Remarks: For consistency and easy comparison, Greenhouse Gas Emission per employee is adopted in the Environmental Report since 2019 to give a fair comparison of Greenhouse Gas generated in the course of operation.

Paper Conservation

Daily Paper Saving Measures in Housekeeping

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



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 2019.

Paper Consumption

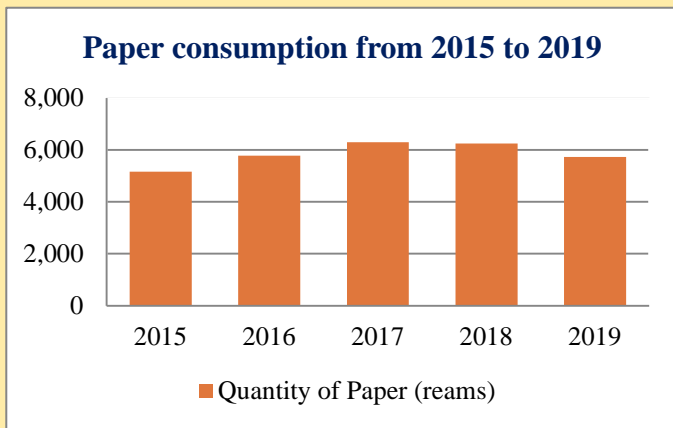


Figure 5-8: Paper consumption from year 2015 to 2019

In 2019, we consumed 5,723 reams of paper, which recorded a decrease of about 8% against the consumption in 2018, despite we have conducted a comparable scale of recruitment exercises in 2019. 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 2019.

Recyclables	Amount Collected
Waste Paper	4,480.2 kg
Plastic	24 kg
Metal	30 kg
Glass Bottle	0 pcs
Rechargeable Battery	0 pcs



Figure 5-9: 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 2019, we collected about 3.9 tonnes of food waste.

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



Figure 5-10: Operation of the food waste decomposition system in CAD Headquarters



Figure 5-11: Canteen operator collecting food waste that can be processed

- ❖ 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.



Figures 5-12: Promotion of ordering less rice portion to reduce food waste

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 2019:-

Buildings of CAD Headquarters	Facilities Building	Office Building	Air Traffic Control Building
Annual Irrigation Consumption (L)	5,297,000	1,431,000	1,944,000
Annual Recycled Water Collected for Irrigation (L)*	1,326,109	112,700	202,100
Percentage of Saving	25%	8%	10%

* Including the water recycled from the cooling tower.

- ❖ 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 2019.

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 5-15: Label issued for printing machines fulfilling Product Eco-responsibility Ordinance

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, five of them are electric vehicles with one new electric vehicle added in 2019. CAD will provide more charging facilities in CAD Headquarters and outstations to encourage on-site service contractors to adopt electric vehicles in providing service to the Department where applicable.



Figure 5-16: The electric vehicles and charging facilities 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 2019, there were a total of 36 Energy Wardens for CAD Headquarters, ATCX and BATCX. Regular briefings were provided to them in order to enrich their relevant knowledge.



Figure 5-17: CLP Power Hong Kong Limited conducted an energy conservation talk on 18 December 2019



Figure 5-18: Group photo at the briefing on 18 December 2019, 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 2019, both the CAD Headquarters and the BATCX obtained the “Excellent Class” of IAQ Certificate. The renewal of IAQ Certificate for ATCX was suspended in 2019 as the premises are undergoing a large-scale refurbishment exercise.



Figure 5-19 and 5-20: The IAQ Certificates obtained in 2019

CLP Smart Energy Award Scheme 2019 – Peak Demand Management Grand Award (Corporate/Government Bodies)

CLP Power Hong Kong Limited organises a Smart Energy Award to recognise organisations with outstanding performance in the areas of energy saving and peak demand management, as well as those who have supported the Renewable Energy Certificate initiative.

CAD has been committed to maintaining a safe, efficient and sustainable air transport system, and pursuing environmentally friendly operations both in work environment and office management to minimise the

disturbance caused by aircraft operations to the local communities. CAD has also actively participated in CLP's peak demand management scheme. During peak demand, the Department appropriately allocates the testing periods of standby generators to fulfil the non-emergency power demands. The Department also conducts regular peak demand management drills with the Electrical and Mechanical Services Department to ensure that power usage can be reduced in an effective manner during peak demand.

CAD won the Grand Award under the peak demand management category in the Smart Energy Award 2019, recognising the department's accomplishment in energy conservation.



Figure 5-21: Peak Demand Management Grand Award presented by CLP

Hong Kong International Airport (HKIA) Carbon Reduction Programme – Champion Award

The Airport Authority Hong Kong (AAHK) implements Carbon Reduction Programme in the HKIA and has introduced an Award Scheme to recognise the efforts and achievements of the Airport community in carbon reduction. CAD proactively implemented a number of initiatives in housekeeping aspects, application of energy efficiency system, and fine-tuning of energy consumption parameters to achieve substantial saving in energy.



Figure 5-22: The then Director-General of Civil Aviation, Mr Simon LI (fifth right), and the then Assistant Director-General (Airport Standards), Mr Richard WU (fourth right), received the Champion Award at the award presentation ceremony of the HKIA Carbon Reduction Award Scheme 2019. (Photo credit: AAHK)

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 2019 HKAEE as 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 2019 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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Hong Kong International Airport
Lantau, Hong Kong

Contact no. : 2910 6352

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