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CIVIL AVIATION DEPARTMENT

CIVIL AVIATION DEPARTMENT ENVIRONMENTAL REPORT 2024

Contents

1. Foreword

This Environmental Report covers the environmental performance of the Civil Aviation Department (CAD) in 2024.

In the work of environmental management, the Department strives to minimise 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 minimise 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 any possible noise impact that aircraft operations may have on local communities. With a view to minimising the impact of aircraft noise on local communities, CAD has been implementing various aircraft noise mitigating measures on the condition that aviation safety is not compromised.

We also monitor the noise caused by aircraft operations through a computerised Aircraft Noise and Flight Track Monitoring System.

Quieter Arrivals

Arrivals Aircraft to Land from the Southwest over the Water

Subject to weather and safety considerations, arrival aircraft between 11 pm and 7 am on the following day are normally instructed to land from the southwest over the water. This measure aims to reduce the number of aircraft overflying populated areas such as Sai Kung, Ma On Shan, Sha Tin, Kwai Chung, Tsing Yi, Tsuen Wan and Tuen Mun (So Kwun Wat/ Siu Lam/ Tai Lam Chung) during the overnight period. In 2024, 88% of arrival aircraft landed from the southwest over the water when weather and safety condition permitted.

Figure 2-1: Arrival aircraft to land from southwest over the water at night

Continuous Descent Approach Procedure

Subject to weather and safety considerations, all aircraft approaching the airport from the northeast between 11 pm to 7 am on the following day are encouraged to adopt the Continuous Descent Approach (CDA).

As aircraft on CDA fly at higher altitudes, there will be less noise experienced in areas such as Sai Kung and Ma On Shan.

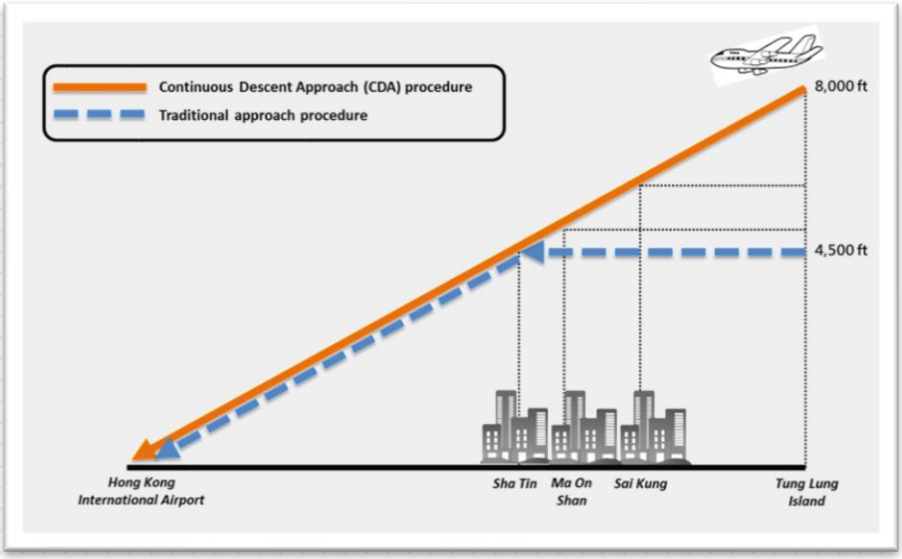


Figure 2-2: Diagram illustrating CDA procedure

Quieter Departures

Noise Abatement Take-off Procedures

All aircraft departing to the northeast are required to adopt the Noise Abatement Take-off Procedures laid down by the International Civil Aviation Organization (ICAO) so as to reduce the noise impact on areas located in the vicinity of the airport.

Under these procedures, aircraft are required to reduce their power upon reaching an altitude of 800 feet or above to abate aircraft noise.

Departure via West Lamma Channel

Subject to weather and safety considerations, aircraft departing to the northeast between 11 pm and 7 am on the following day are required to use the southbound route via the West Lamma Channel. This measure aims at reducing the number of aircraft overflying populated areas such as Tuen Mun (So Kwun Wat/ Siu Lam / Tai Lam Chung), Tsuen Wan North and Kowloon East. In 2024, 98% of aircraft departing to the northeast between 11 pm and 7 am on the following day used the southbound route via the West Lamma Channel.

Figure 2-3: Aircraft departing to the northeast use the southbound route via the West Lamma Channel at night

Improving Track Adherence

All aircraft equipped with satellite-based navigation technology departing to the northeast of the airport between 11 pm and 7 am on the following day are encouraged to adopt a set of Radius-to-Fix (RF) flight procedures. Aircraft flying RF procedures adhere closely to the nominal centre line of the flight track when making south turn to the West Lamma Channel. This keeps the aircraft at a distance away from the areas in the vicinity of the flight paths, and reduces the impact of aircraft noise in these areas.

Restrictions on Noisy Aircraft

In accordance with the Civil Aviation (Aircraft Noise) Ordinance (Cap. 312), 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. As a step further, airlines are not allowed to schedule aircraft whose noise levels only marginally meet the Chapter 3 noise standards[1] to land and take off in Hong Kong.

In addition, airlines are forbidden from scheduling aircraft that do not comply with the more stringent 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 land and take off in Hong Kong between 10 pm to 7 am on the following day.

Aircraft Noise Monitoring

CAD monitors the noise caused by aircraft operations through a computerised Aircraft Noise and Flight Track Monitoring System (ANFTMS). The ANFTMS is comprised of multiple outdoor noise monitoring terminals (NMTs) which are located along or close to the flight paths operating into and out of the airport to collect noise data, and a computer system which correlates noise data collected with the actual aircraft flight tracks detected by CAD's radar system.

Figure 2-4: Outdoor noise monitoring terminal

[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.

Following the commencement of operation of the Three-runway System (3RS) operation on 28 November 2024, the CAD has expanded the ANFTMS through the installation of additional NMTs at locations close to the new flight paths to ensure more comprehensive monitoring of aircraft noise under 3RS operation. At present, the NMTs are located respectively at Sha Lo Wan, Tung Chung, Sunny Bay, Ma Wan, Tsing Yi (2 terminals), Tai Lam Chung, Tsing Lung Tau, Ting Kau, Tsuen Wan, Kwai Chung, Tai Wai, Mid-Levels, North Point, Jardine's Lookout, Shau Kei Wan, Tuen Mun, Siu Lam, Tai Mo Shan, Ma Liu Shui, Clearwater Bay and Tsz Wan Shan.

Figure 2-5: Locations of the outdoor noise monitoring terminals

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 kept abreast of the latest development of the reduction of carbon dioxide emission from aircraft operations for dissemination of the latest guidelines from ICAO 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.

In addition, CAD would continue to closely observe ICAO's guidance on Sustainable Aviation Fuel (SAF) and other cleaner aviation energies, and take timely actions, if necessary, to align with the national and HKSAR government policies.

Measures Taken by Airlines

The airline industry has been actively working to become more sustainable by introducing newer, more fuel-efficient, quieter aircraft equipped with advanced navigation technology. In 2024, 14 old generation commercial aircraft were removed from the Hong Kong register while similar number of new modernised commercial aircraft were introduced.

In the same year, the Hong Kong Sustainable Aviation Fuel Coalition was initiated by multi-stakeholder, which serves as a platform that brings together the aviation industry, SAF producers, fuel suppliers, infrastructure developers, corporate users and policymakers to collaborate on advancing the development, supply and use of SAF in Hong Kong.

The airline sector is committed to ambitious decarbonisation goals of net-zero emission by 2050 through investing in modern, fuel efficient aircraft leading the way towards a greener future for air travel.

Figure 3-1: Hong Kong Sustainable Aviation Fuel Coalition Partners

Carbon Emission Certification

To mitigate aviation's environmental impact, the ICAO published Standards and Recommended Practices on the certification of aircraft carbon emissions in July 2017, which aimed at reducing the contribution of aviation greenhouse gas emissions to global climate change.

The Standards apply to, among others, large commercial aircraft that are new type designs from 2020. They will also apply to in-production aeroplanes from 2023 that are modified and meet specific change criteria. This is subsequently followed up by a production cut-off in 2028, which means that in-production aeroplanes that do not meet the Standards can no longer be produced beyond 2028 unless the designs are modified to comply with the Standards.

By establishing these certification standards, ICAO has paved the way for aircraft and engine manufacturers to develop eco-friendly products, which is significant for mitigating climate change and achieving sustainable development.

Carbon Offsetting and Reduction

ICAO decided in October 2016 to implement the 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 aims to complement a broader package of measures for implementation 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.

As part of the scheme, aeroplane operators in Hong Kong have started monitoring their CO2 emissions from international flights and reported the relevant statistics since 2019.

4. Green Measures in Other Aviation Related Operations

CAD recognises 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.

Electronic Tools and Standardised Forms for Various Tariff and Flight Applications

The use of electronic tools and 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 relevant changes of filing requirements of the Passenger and Cargo Fuel Surcharges respectively, the consumption of paper has been greatly reduced.

The use of e-filing as a platform for submission of flight applications and relevant information continues 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 99% of these applications.

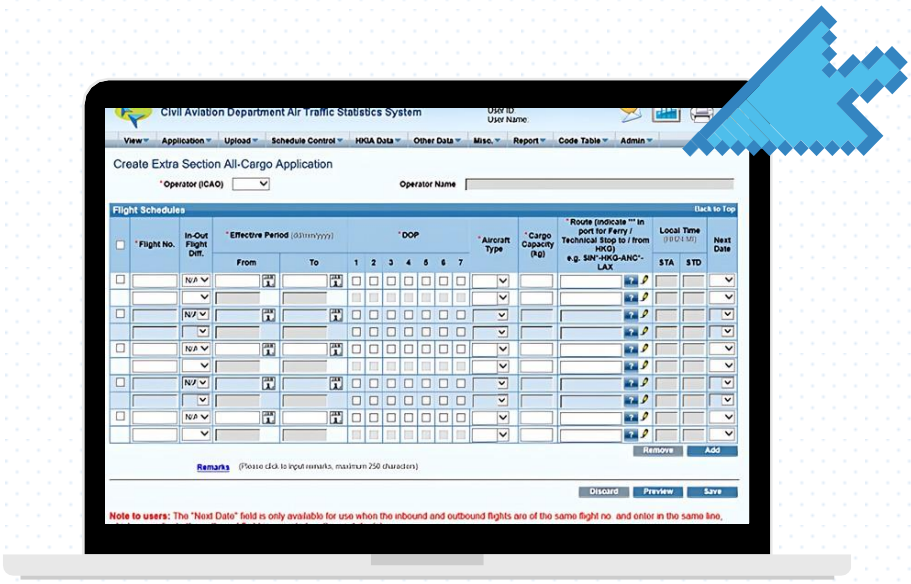


Figure 4-1: Layout of e-filing system

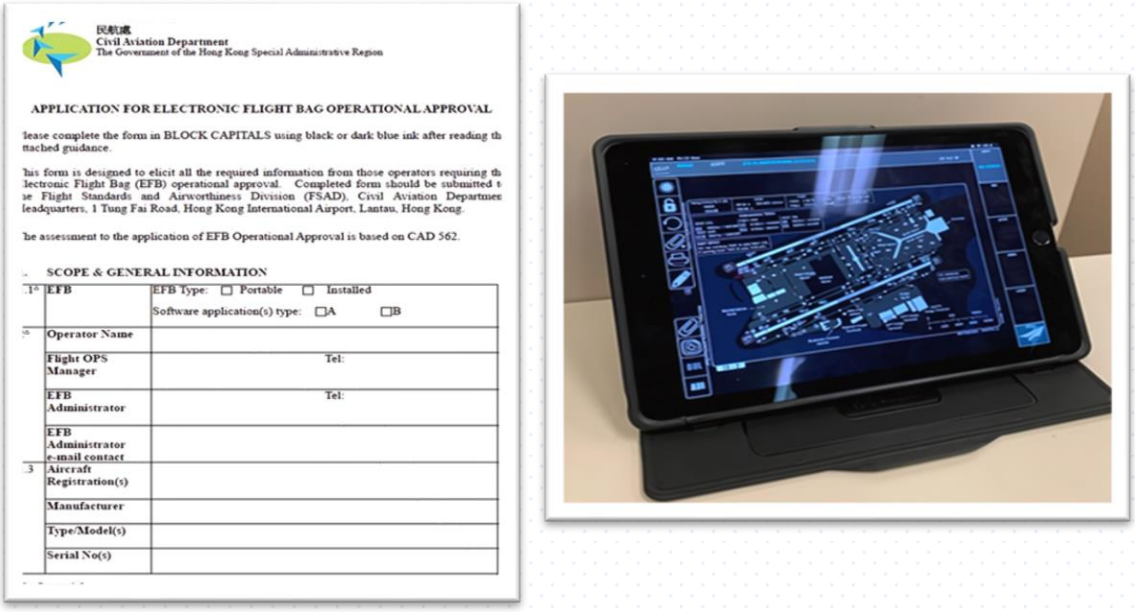
Electronics Submission / Approval

Use of Electronic Flight Bags and Electronic Submission of Flight Standards & Airworthiness Related Applications

Airlines are required to carry a substantial array of documents including but not limited to operations manuals, emergency procedures, checklists, navigation charts, flight plans etc. on board for flight crew's reference during aircraft operations. With the approval of the CAD, airlines may now use Electronic Flight Bags (EFB) to store electronic copies of these required documents, thereby significantly reducing the amount of paper documentation carried on board or in-flight crew's carry-on flight bag.

EFBs facilitate flight crew to review various documents such as air navigation charts and electronic flight plans without the need of printed materials, thus enhancing the efficiency and effectiveness of handling tasks during flight operations. Additionally, the latest air traffic information, weather, as well as other operational updates can be quickly provided to flight crew via the EFB.

The application form for Operational Approval of EFB is available on the CAD website. As of the end of 2024, six local airlines have obtained approval from CAD to use EFBs.



Civil Aviation Department
The Government of the Hong Kong Special Administrative Region

APPLICATION FOR ELECTRONIC FLIGHT BAG OPERATIONAL APPROVAL

lease complete the form in BLOCK CAPITALS using black or dark blue ink after reading th
ttached guidance.

his form is designed to elicit all the required information from those operators requiring th
lectronic Flight Bag (EFB) operational approval. Completed form should be submitted t
e Flight Standards and Airworthiness Division (FSAD), Civil Aviation Departmen
leadquarters, 1 Tung Fai Road, Hong Kong International Airport, Lantau, Hong Kong.

he assessment to the application of EFB Operational Approval is based on CAD 562.

. SCOPE & GENERAL INFORMATION

.1°	EFB	EFB Type: ☐ Portable ☐ Installed Software application(s) type: ☐A ☐B
.5	Operator Name	
	Flight OPS Manager	Tel:
	EFB Administrator	Tel:
	EFB Administrator e-mail contact	
.3	Aircraft Registration(s)	
	Manufacturer	
	Type/Model(s)	
	Serial No(s)	

Figure 4-2: Application Form for Electronic Flight Bag and Electronic Flight Bag

Application for Guided Tours of the Education Path

Since 2021, electronic means for application for visit to the Aviation Education Path have been made available to interested individual and groups.

Figure 4-3: Aviation Education Path

Online Promulgation of Divisional Documents

The "ATMD Information Dissemination Website", a website with secured access limited to divisional staff, was launched in September 2014 for the online promulgation of divisional documents of the Air Traffic Management Division (ATMD). It was at first used to disseminate roster information to colleagues through the Internet.

Since December 2014, the function of the website has 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 sustain the effort for achieving 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. It is estimated that about 2,000 CD-ROMs have been saved each year since the implementation of this initiative.

Since August 2017, the distribution of internal Administrative Memorandum has been digitised to enhance the operational efficiency while being more environmentally friendly. To further reduce the need for hard copies, all briefing materials for the 3RS Conversion Training and three Training Course Plans were distributed via the "ATMD Information Dissemination Website" in 2024, and it is estimated that about 19,500 sheets of A4 size paper have been saved respectively.

The “ATMD Information Dissemination Website” has recorded over 15,800 visits in 2024.

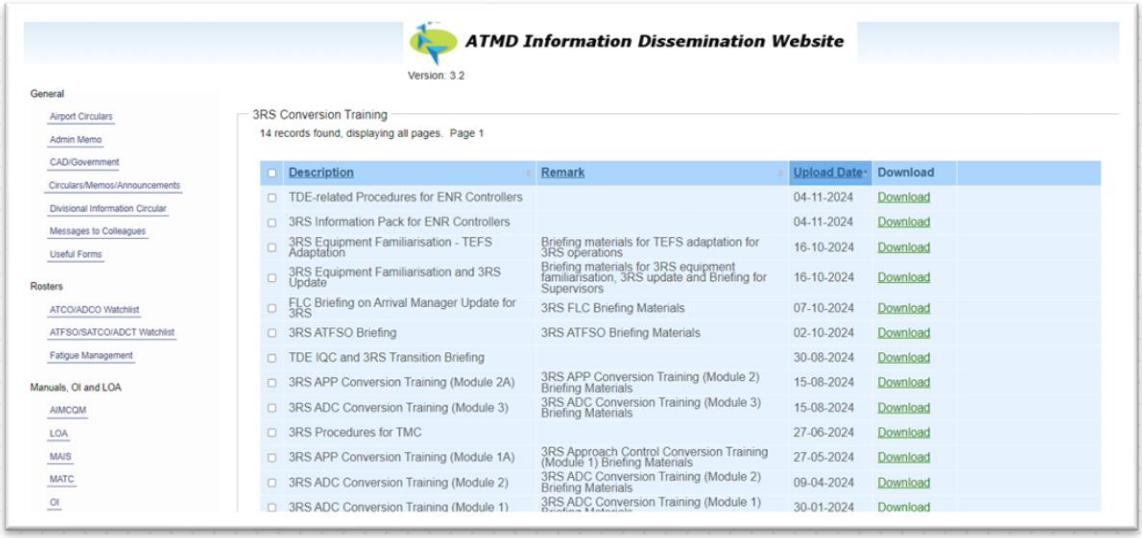


Figure 4-4: ATMD Information Dissemination Website

Paperless Operational Manuals

Figure 4-5: Hong Kong Aeronautical Information Services website

In line with the departmental green measures, the Aeronautical Information Management Centre (AIMC) under the ATMD has been working on going green and all publications from AIMC are now in electronic format.

Aeronautical Publications (including Aeronautical Information Publication (AIP), AIP Supplement (AIP SUP), Aeronautical Information Circular (AIC) and Notice to Airmen (NOTAM)) of Hong Kong are published in electronic form via Hong Kong Aeronautical Information Services website; whereas the electronic copies of the three ATMD operational manuals, namely Manual of Air Traffic Control (MATC), Manual of Aeronautical Information Services (MAIS) and Aeronautical Information Management Centre Quality Manual (AIMCQM) are disseminated via ATMD Information Dissemination Website. In 2024, a grand total of over 11,200 sheets of A4-size paper were saved.

To enhance accessibility, the Operational Information Database System (OIDS) and CAD intranet were also introduced for accessing these documents in operational areas.

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 reduce energy consumption in our daily office operations, the following environmentally friendly measures have been implemented in CAD Headquarters buildings:

- Adhering to the Government recommended summer air conditioning setting of 25.5°C and use electric fans to improve air circulation and provide greater staff comfort when necessary;
- Turning off any air conditioning, lights, lifts, escalators, digital signage systems, and video walls, etc. when they are not in use;
- Periodically adjusting the operation period of essential external lighting to optimise energy usage in accordance with seasonal changes in daylight hours;
- Optimising the energy saving mode of non-essential lighting at lift lobbies from 50% to 100% off;
- Switching off lights from midnight to early morning and replacing lighting with motion sensors in pantries;

Figure 5-1: Lighting with motion sensors in pantries

- Regularly reviewing the operating hours of Air Handling Units according to the latest occupancy patterns to avoid energy wastage;
- De-lamping excess lights in corridors and common areas;
- Turning off some lifts in Air Traffic Control Building, Office Building, and Facilities Building of CAD Headquarters and Backup Air Traffic Control Complex (BATCX) during non-peak office hours;
- Operating limited lifts outside normal office hours and using night mode lighting, suspending escalator service in the Office Building of CAD Headquarters;
- Encouraging colleagues to take the staircases instead of using lifts;
- Installing a low-speed-high-volume fan in the Canteen to enhance air circulation and in turn save energy by reducing the use of air-conditioning;

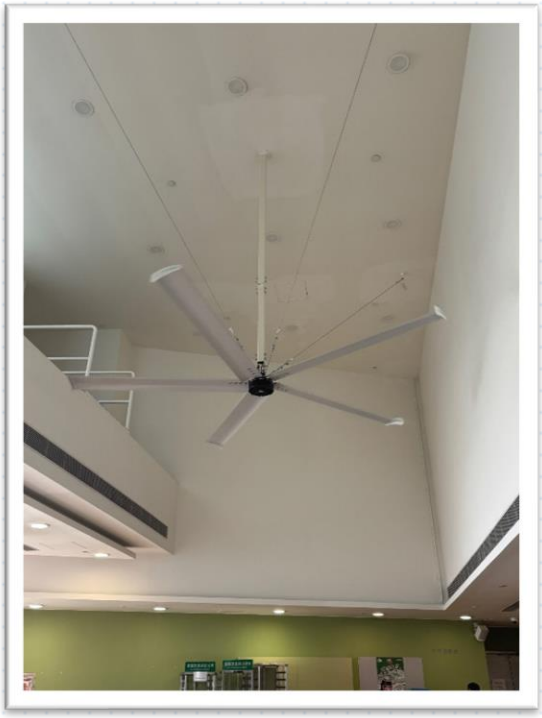


Figure 5-2: Low-speed-high-volume fan in the canteen

- Installing energy-saving timer devices in most share-used printers and photocopiers to cut down 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 reminders in all meeting/training rooms to draw users' attention to switching off lights and electrical appliances before leaving;
- Adopting solar films in strategic locations to cut down indoor heat and sunlight;
- Adopting motorised blinds in the atrium of CAD Headquarters to protect against sunlight and heat during sunny days;

- Incorporating environmentally-friendly installation during building construction, such as installing photovoltaic panels on the rooftop of CAD Headquarters. In FY 2024-25, the panels generated 14,707 kWh of electricity;
- Maintaining a green roof to reduce the temperature on the top floor;
- Reviewing occupancy patterns in CAD Headquarters before the summer season to optimise air conditioning supply schedules for different zones so as to reduce the overall cooling demands as well as the air conditioning operating hours; and
- Reviewing the video wall operation schedule at CAD Headquarters to optimise energy savings.

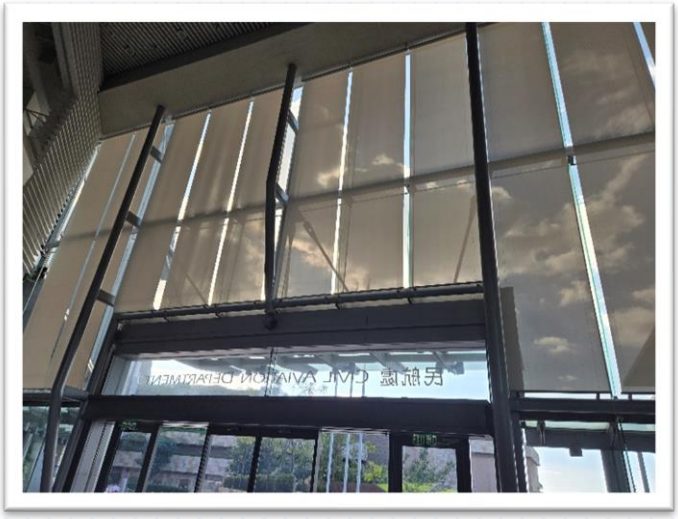


Figure 5-3: Motorised blinds in the atrium

Figure 5-4: Photovoltaic panels on the rooftop

Figure 5-5: Green roof on the top floor

Green Provisions at the New Air Traffic Control Tower (NAT)

CAD collaborated with AAHK for incorporating green features at the design stage of NAT. The project was registered under the Building Environmental Assessment Method Plus New Buildings V1.2 as "Hong Kong International Airport – Third Runway Concourse and Air Traffic Control Tower", targeting a final PLATINUM rating upon completion of the entire project.

A wide range of green features have been adopted, including –

- Using recycled or sustainable construction materials and products;
- Recycling of construction waste;
- Adopting seawater cooling system and electric fans;
- Applying LED lighting and energy-efficient lighting control with Digital Addressable Lighting Interface;
- Installing variable voltage variable frequency (VVVF) lifts with regenerative power;
- Installing solar photovoltaic panels for sustainable energy generation; and
- Installing air filters.

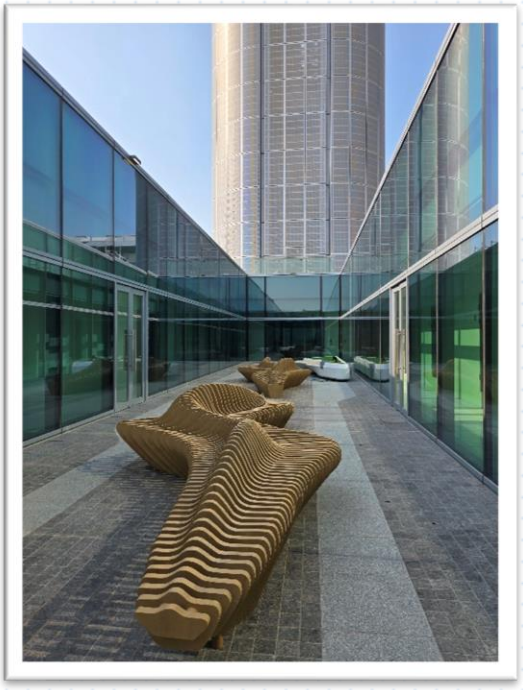


Figure 5-6: Furniture at the NAT courtyard manufactured by recycled timber

Energy Consumption

The Government has promulgated a 6% "Green Energy Target" for the period from FY 2020-21 to FY 2024-25. The energy consumption in FY 2018-19 was set as the baseline for comparison. The range of reporting has been expanded to incorporate non-electricity energy usage such as town gas and liquefied petroleum gas. In addition, the enlarged scope included energy use at infrastructure facilities.

Apart from energy consumption, the target also considered the generation of renewable energy such as electricity generated by photovoltaic panels. In FY 2024-25, the Department's overall energy performance improved by 6.02%.

	Energy consumption (Billed & RE)	Energy consumption under comparable operating conditions[1]	Renewable energy (RE) generation
FY 2018-19 (baseline)(kWh)	26,204,431 **(a)**		17,233
FY 2022-23(kWh)	28,379,477	24,865,933	16,931
FY 2023-24(kWh)	28,485,138	24,657,478 (typo in last year's report)	18,436
FY 2024-25(kWh)	28,940,715	24,645,871	35,080
Net change compared with the previous year (kWh)	455,577	-11,607	16,644
Change compared with **(a)**, (%)[2]		-5.95% **(b)**	+0.13% **(c)**
Energy Performance **(b)+(c)**, (%)[2]		+6.02%	

Carbon Audit and Energy Audit

CAD has engaged consultants to conduct energy audits for major CAD premises, including CAD Headquarters, Air Traffic Control Complex (ATCX) in 2015, and BATCX in 2015 and 2022. The energy audit reports issued in 2016 and 2023 recommended that CAD should continue to adopt its green measures and implement/maintain the following energy saving initiatives based on site conditions:

1. Keeping the air conditioning temperature setting at 25.5°C
2. Turning off lights near windows whenever possible
3. Labelling zone control plans alongside the switches
4. Lowering or closing blinds to block the sunlight
5. Switching off the electrical appliances when the facility is unoccupied

[1] Activities of bureaux/departments evolve over time in meeting the public service demands, which lead to changes of operating conditions and significant impacts on energy consumption such as operating hours, usage rate number of equipment, the floor area of venues, volume of water/sewage flow, etc. Such changes also bring significant impacts on energy consumption and adjustments (or normalisation processes) are therefore conducted to generate a more likely actual energy consumption under comparable operating conditions with baseline.

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

Since the initial internal carbon audit in 2017, CAD has performed carbon audits annually. The table below summarises the outcomes over the last three years:

Year	Total Greenhouse Gas Emission (tonnes of CO)		
	CAD Headquarters	ATCX	BATCX
2022	6,467	2,098	1,025
2023	6,678	2,088	1,045
2024	6,829	2,151	1,148

Paper Consumption

Daily Paper Saving Measures in Housekeeping

We advocate the "4-R principle" in paper consumption, which is summed up in the diagram below.

Reduce

- Encourage staff to use both sides of paper for printing and photocopying
- Circulate one copy of document to relevant staff rather than to make a separate copy for each staff
- Use electronic means for circulation (e.g. communicating by E-mails, posting and circulating notices/circulars through digital signage system and CAD electronic bulletin board, etc.) and meetings (e.g. screen project for presentation)

Reuse

- Reuse envelopes and loose minute jackets
- Collection boxes for used envelopes are available to promote reuse
- Use blank side of used paper for photocopying, printing and drafting

Replace

- Use recycled paper instead of plain paper

Recycle

- Waste paper is collected for recycling

Measures on Paper Conservation

In addition to the routine housekeeping, we make the following arrangements to use less paper:

- Since 2017, we have stopped printing copies of CAD Annual Report;

- In 2021, the CAD Link followed the stoppage of printing copies. This arrangement has saved 55,000 sheets of A4 size paper annually;
- Staff are encouraged to use fewer paper towels by posting notices at paper towel dispensers; and
- Newspapers clippings are now electronically distributed instead of in hardcopy.

In 2024, around 44,000 sheets of A4 sized paper were saved.

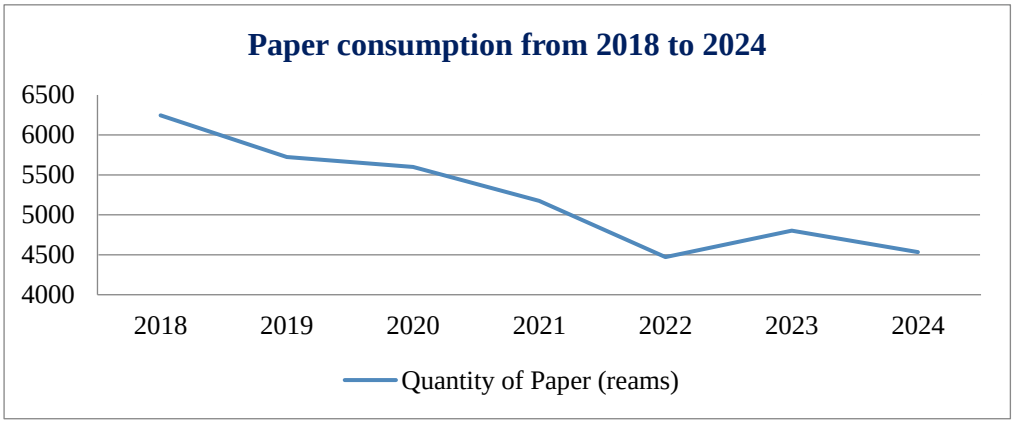


Figure 5-7: Paper consumption from year 2018 to 2024

In 2024, we used 4,533 reams of paper, which represented a decrease of 5.6% when compared to the level in 2023 (4,802 reams of paper), which was an encouraging result of the collective efforts made by each employee to conserve paper. Staff members are encouraged to sustain their effort.

Waste Reduction, Collection and Recycling

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

For recycling, we collect old rechargeable batteries, used metal cans, plastic bottles, glass bottles, and waste paper. Recycling bins are provided in common spaces to facilitate disposal more convenient for staff members and guests. Regular deliveries of the gathered items are made to recycler. The amount of recyclables collected in 2024 are shown in the table below.

Recyclables	Amount Collected
Waste Paper	214 kg
Plastic	25.5 kg
Metal	21.5 kg
Glass Bottle	13 pcs
Rechargeable Battery	32 pcs

Figure 5-8: Recycling bins

Food Waste Collection and Decomposition System

One of the main solid wastes in Hong Kong is food waste. Therefore, reducing food waste helps reduce the volume of garbage sent to landfills. A food waste decomposition system had been installed in CAD Headquarters in order to achieve this objective.

The CAD Staff Canteen at CAD Headquarters collects food wastes, which are then disposed of in the food waste decomposition system. Food wastes are transformed into liquid during the decomposition process by an enzyme, and some of the liquid is applied to the vegetation at CAD Headquarters as a natural fertiliser. The remainder is released as effluent. We collected around 2.48 tonnes of food waste in 2024.

Figure 5-9: Food waste decomposition system in CAD Headquarters and Food Waste Collection area in Canteen

Reduction of Waste in Staff Canteen

The Staff Canteen has taken the following steps to reduce other solid wastes in addition to treating the food waste collected through the food waste decomposition system:

1. Promotion of No Straw Campaign
2. Stop using poly-foam food container or disposable plastic tableware
3. Encourage customers to bring their own food container and avoid using disposable utensils
4. Encourage customers to request a smaller portion of rice, so as to reduce the likelihood of food waste
5. Post publicity materials in the Staff Canteen to remind customers to reduce the amount of leftover food

Figure 5-10: Publicity materials about the ban of disposable plastic tableware

Food Wise Charter

Since 2016, we have signed the Environmental Protection Department's Food Wise Charter. Since participation, regular evaluations in the canteen meeting of waste reduction measures are conducted.

The management, staff, and Staff Canteen operator keep close communication with one another through the Canteen Sub-committee.

Collection of Rain Water Recycling for Irrigation

The watering system at CAD Headquarters uses collected rainwater and air conditioning condensate water.

The following table sets out the savings of irrigation water in 2024:

Building of CAD Headquarters	Facilities Building	Office Building	Air Traffic Control Building
Annual Irrigation Consumption (L)	7,540,260	3,413,264	2,559,618
Annual Recycled Water Collected for Irrigation (L)*	745,000	400,300	463,500
Percentage of Saving	9.8%	11.7%	18.1%

*Including the water recycled from the cooling tower.

Figure 5-11: Irrigation Sprinkler

Water Saving Measures

Fresh water is a priceless natural resource. We encourage our staff to cut down their water consumption through the following means:

- Water dispensers are set up in the meeting spaces for people attending seminars and conferences.
- Signs are posted in the pantries to encourage colleagues to save water; and
- For better control of water flow, a new type of faucet with higher water-saving efficiency has been adopted to replace malfunctioning ones.

Figure 5-12: Faucet with higher water- saving efficiency in the pantries

Bring Your Own Cup

We encourage staff members to bring their own cups to meetings to reduce the trash produced by disposable paper/plastic cups.

Meeting rooms are equipped with water dispensers for visitors.

The caterer of departmental events is asked to provide reusable food utensils rather than providing disposable tableware to encourage waste reduction.

Reduction in Procurement of Newspapers

Newspaper cuttings via electronic methods continue to be circulated to reduce paper consumption.

Figure 5-13: Latest Issue of CAD Link online publications

Green Procurement

CAD follows the Government's green procurement policy (including the guidelines set out in the Environment and Ecology Bureau (Environment Branch) (EEB) Circular Memorandum No. 1/2021 on "Green Procurement in the Government" with revision in January 2025). We purchase items that are durable, energy-efficient and recyclable and we avoid procuring single-use disposable items.

In 2024, CAD placed 183 orders totaling HK$773,566.62 In 2024, major green products procured included toner cartridges, wooden furniture and system servers.

Below are some examples of green procurement measures implemented:

- Procure operation equipment, office equipment and other electrical appliances having energy label;

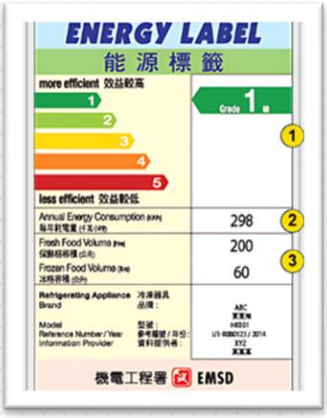


Figure 5-14: Energy Label issued by Electrical and Mechanical Services Department

- Choose green products such as refillable ball pens, mechanical pencils and recyclable laser printer cartridges;
- Review 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;
- Incorporate terms requesting Contractor to follow green guidelines in new cleansing contract; and
- Follow the general guidelines on matters relating to purchase and disposal of regulated electrical equipment (REE), e.g. air conditioner, refrigerator, computer and printer, etc.

During procurement, we recommend the following green measures to the suppliers for their preparation of tenders and performing the contract:

- All documents printing on both sides and on recycled paper, avoiding paper that exceeds 80 gsm;
- Avoid the use of plastic laminates, glossy covers or double covers as far as possible;
- Use single line spacing and avoiding excessive space in the margins and in between paragraphs;

- Minimise 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

Electric vehicles are used more frequently in Hong Kong to reduce the city's air pollution. Since 2013, CAD has started replacing its fuel-propelled saloon vehicles with electric ones. Currently, out of our current fleet of six saloon vehicles, five of them are electric vehicles. Procurement of a 16-seater and a 24-seater electric buses is being arranged by the Government Logistics Department and tentatively available in Q2 2026.

In order to encourage on-site service contractors to use electric vehicles when delivering service to the Department, sufficient charging facilities are provided in CAD Headquarters and outstations. The contractors have also been encouraged to replace their fleet with electric vehicles.

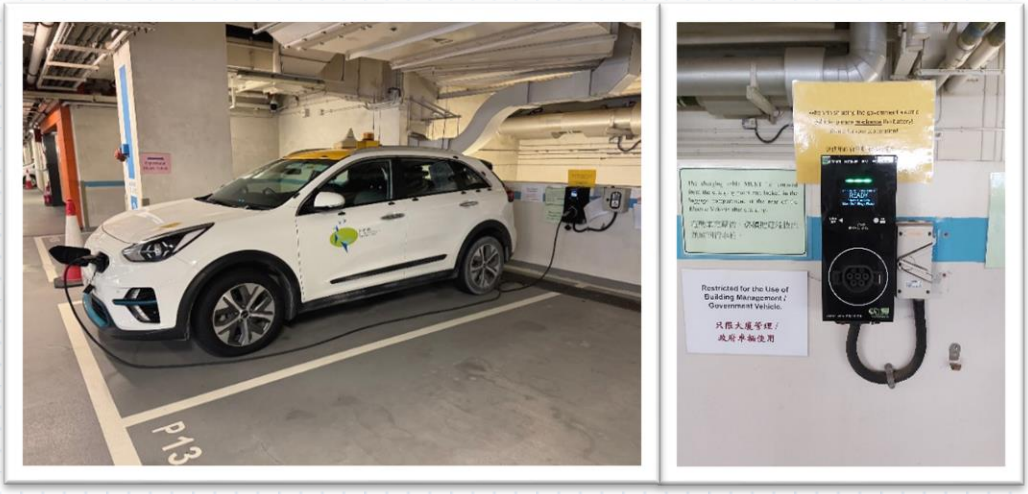


Figure 5-15: Electric vehicle and charging in CAD

Training and Communication

Environmental Management Committee

The Departmental Green Manager serves as the Chairman of the Environmental Management Committee (EMC), comprising divisional representatives to encourage environmentally conscious management within the Department. The major work of the Committee includes discussion of green ideas, suggestions of raising staff awareness, review on the implementation of green measures in order to accomplish the environmental protection targets.

Appointment of Green Managers and Energy Wardens

To oversee and coordinate divisional green management issues, each division has designated an officer as the Green Manager.

Additionally, Energy Wardens were appointed to encourage and remind personnel to follow daily energy-saving and green housekeeping practices in the workplace. There were 37 Energy Wardens in total for CAD Headquarters, ATCX, and BATCX in 2024. Briefings would be provided for them to get acquainted with the latest knowledge.

Green Tips to all CAD Staff

CAD has established a Green Corner in the CAD Information Sharing Portal. It serves as a platform for dissemination of environmental management guidelines and green advice among CAD staff, including circulars and pamphlets on waste prevention techniques in the workplace and energy- saving measures.

The relevant information would also be re-circulated to staff by electric means regularly. Divisions were encouraged to display the green advice and housekeeping measures at prominent locations of the office.

Training for New Recruits

Since 2017, CAD has incorporated a session on an introduction of green management into the orientation programme for officers newly joined the Department. This ensures that they had a good grasp of and adhere to the departmental green policies and practices.

Application of Technology in Enhancing Energy Efficiency

Application of Artificial Intelligence (AI) in Energy Optimisation System

CAD has been exploring ways to enhance the most energy-consuming component of electricity resources – the air conditioning system. Energy Optimisation System (EOS) was adopted to optimise the control of the central air conditioning system. After some years of implementation, AI features were added to upgrade the EOS into AI-EOS to drive further energy efficiency.

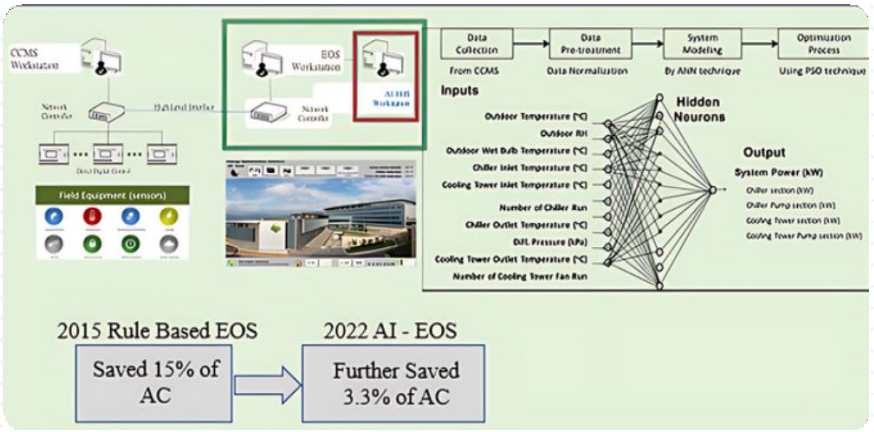


Figure 5-16: Upgrade of EOS into AI-EOS

Unlike EOS with rule-based algorithm, this technology adopts neural network, with different input operation parameters to continuously learn and optimise chiller operation efficiency for energy saving.

The application of AI-EOS has provided an effective means to enhance energy efficiency and at the same time to reduce carbon emission for central air conditioning systems which are widely used in headquarters and commercial buildings. As a result, an extra 3.3 % reduction in the annual energy consumption from chiller plant operation was achieved since 2022.

Recognition

Air Traffic Management Awards 2023

The implementation of the Wake Turbulence Group and Approach Spacing Management System at HKIA won runner-up honours at the Air Traffic Management Awards 2023 in the "Greener Skies" category by the Civil Air Navigation Services Organisation.

The award recognises the significant achievements of leading organisations in civil air navigation services that utilise advanced technologies to promote greener skies. This technology innovation enhances the capacity and efficiency while reducing fuel consumption and carbon dioxide emissions in a safe and sustainable manner.

Figure 5-17: DGCA receiving the Air Traffic Management Awards in March 2024

Indoor Air Quality

We support the Clean Air Charter, and implemented measures to lessen emissions from our daily operations.

In order to keep track of the indoor air quality condition, the IAQ of CAD facilities has continued to be evaluated yearly. "Excellent Class" IAQ Certificates for the CAD Headquarters, the ATCX and the BATCX were received in 2024.

Figure 5-18: The IAQ Certificates obtained in 2024

CLP Smart Energy Award 2024

The award aims to encourage organisations to adopt innovative technologies, smart energy management and carbon management initiatives, and recognise organisations with outstanding performance. The three major award categories are Innovation, Carbon Management and Energy Management. In addition, Renewable Energy Contribution Awards, Joint Energy Saving Awards, Sustainable Vision Awards and the new Low-Carbon Driving Awards will be presented, in recognition of organisations with contributions for energy conservation and carbon reduction. CAD received the “Sustainable Vision Award” as recognition of our contributions.

Figure 5-18: CLP Smart Energy Award 2024

6. Views and Suggestions

CAD Environmental Report in the previous years can be found in the CAD website (https://www.cad.gov.hk/english/environmental_reports.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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