

Report No. 56 of the Director of Audit — Chapter 4

GOVERNMENT INITIATIVES TO IMPROVE INDOOR AIR QUALITY

Summary

1. In Hong Kong, most people spend a majority of time at home, in office and other indoor environments. Research has found that many indoor air pollutants may cause adverse health effects and illnesses. The Environment Bureau (ENB) and the Environmental Protection Department (EPD) are responsible for formulating and implementing environmental policies on indoor air quality (IAQ). In 1998, an inter-departmental IAQ Management Group was set up to coordinate actions on the control of IAQ. In 2000, the Administration informed the Legislative Council (LegCo) Panel on Environmental Affairs (EA Panel) of the implementation of the IAQ Management Programme. In November 2006, the EPD commissioned a consultancy study (2006 Consultancy Study) to review the IAQ Management Programme. The Audit Commission (Audit) has recently conducted a review of the Government's actions taken in improving IAQ, focusing on the implementation of the IAQ Management Programme.

Public education and publicity campaign under IAQ Management Programme

2. In January 2001, the EPD set up the IAQ Information Centre in a building in Kowloon Tong and a cyber centre on the Internet. In April 2001, the EPD appointed a service provider to operate and maintain the two centres, and to conduct seminars and school visits to promote IAQ improvement measures.

3. *Promotion of public awareness of IAQ.* Audit examination revealed that, from 2007 to 2010, there were only about one group visit to the IAQ Information Centre every two days and less than one individual visitor a day. During the period, the EPD only organised advertisements on three occasions in newspapers, but none on television and radio. Furthermore, from 2007-08 to 2009-10, the number of school visits actually conducted by the service provider was significantly lower than the contract requirements. *Audit has recommended that the Director of Environmental Protection should (a) step up efforts to promote the public awareness of IAQ; (b) closely monitor the delivery of services by the service provider of the IAQ Information Centre in accordance with contract requirements; and (c) liaise with the Secretary for Education to step up efforts to promote IAQ awareness at schools.*

4. ***Meetings of the IAQ Management Group.*** Audit noted that the IAQ Management Group did not hold any meetings from July 2003 to December 2010, notwithstanding that the IAQ Management Programme was under implementation during the period. *Audit has recommended that the Director of Environmental Protection should arrange regular meetings of the IAQ Management Group for examining important IAQ issues and discharging the Group's responsibilities.*

5. ***Mechanisms for handling complaints.*** Audit noted that the EPD had not established mechanisms for collecting and collating complaint information from other government departments on IAQ. *Audit has recommended that the Director of Environmental Protection should establish mechanisms for handling such complaints.*

Setting of IAQ Objectives

6. In 2003, the EPD established the IAQ Objectives for Office Buildings and Public Places (IAQ Objectives). The IAQ Objectives, comprising 12 parameters, are to be used for evaluating and assessing IAQ in offices and public places served by mechanical ventilation and air-conditioning (MVAC) systems for human comfort. There are two classes of achievement, namely Excellent Class and Good Class.

7. ***Updating of IAQ Objectives.*** Audit noted that the IAQ Objectives had not been revised since their promulgation in September 2003. Audit also noted that airborne fungi had not been included in the IAQ Objectives, notwithstanding that the EPD had indicated in September 2003 to do so. *Audit has recommended that the Director of Environmental Protection should: (a) conduct periodic reviews of the IAQ Objectives and revise the Objectives, where necessary; and (b) take action to include airborne fungi in the IAQ Objectives.*

Publishing of guidance notes and practice notes

8. In September 2003, the EPD issued the Guidance Notes for the Management of Indoor Air Quality in Offices and Public Places (Guidance Notes). In November 2003, the EPD issued two sets of practice notes for managing air quality in air-conditioned public transport facilities, one for buses and the other for railways (Practice Notes).

9. ***Adoption of Guidance Notes for offices and public places.*** Audit noted that compliance with the Guidance Notes by owners, tenants and building management was voluntary, and the EPD had not set up appropriate monitoring mechanisms. *Audit has recommended that the Director of Environmental Protection should set up mechanisms to: (a) monitor the extent of adoption of, and compliance with, the Guidance Notes; and (b) consult owners, tenants and building management who have not adopted the Guidance Notes to ascertain their reasons for not doing so.*

10. ***Publishing of guidelines for other indoor environments.*** Audit noted that the Guidance Notes only covered office buildings and some public places but not schools, whilst some countries had extended their IAQ programmes to cover schools. *Audit has recommended that the Director of Environmental Protection should consider publishing IAQ guidance notes for child care centres, kindergartens and schools.*

11. ***Compliance with Practice Notes for public transport facilities.*** Audit examination revealed that the EPD had not set up a mechanism to regularly monitor the bus and railway operators' compliance with the Practice Notes. Audit could not find information on the operators' websites about the extent of their compliance with the Practice Notes. *Audit has recommended that the Director of Environmental Protection should consider taking measures to encourage public bus and railway operators to comply with the Practice Notes, and publish on their websites their extent of compliance for public information.*

Administration of IAQ Certification Scheme

12. In September 2003, the EPD launched the voluntary IAQ Certification Scheme for enclosed offices and public places served by MVAC systems.

13. ***Effectiveness of IAQ Certification Scheme.*** Audit noted that, although the number of offices and public places participating in the IAQ Certification Scheme increased from 27 in 2003 to 559 in 2010, the participation rate was very low, given the large number of offices and public places in Hong Kong. *Audit has recommended that the Director of Environmental Protection should: (a) conduct a review to ascertain the reasons for the low participation rate of the Scheme; and (b) explore effective measures to help improve IAQ in offices and public places.*

14. ***Withdrawal from the Scheme.*** Audit examination revealed that, from 2003 to 2010, a total of 245 IAQ certificates had not been renewed upon expiry. *Audit has recommended that the Director of Environmental Protection should take measures to encourage participants to renew their IAQ certificates before expiry.*

15. ***Assessment periods.*** Audit examination of a sample of IAQ reports for public places (such as sports centres, libraries) revealed that the IAQ assessments were carried out during weekdays, but not during periods of high occupancy in weekends and public holidays. This practice was at variance with the requirements under IAQ guidelines. *Audit has recommended that the Director of Environmental Protection should require certificate issuing bodies to conduct IAQ assessments covering periods of high occupancy of public places.*

Management of IAQ in government premises

16. In 2000, the Administration informed the LegCo EA Panel that it would take the lead in implementing the IAQ Certification Scheme. According to the Architectural Services Department's instruction of October 2003, for projects involving buildings served by MVAC systems, the design of the systems should aim to achieve the Excellent Class of the IAQ Objectives. Furthermore, a joint circular of the Development Bureau and the ENB of 2009 has stipulated that all new government buildings should aim to achieve the Excellent Class of the IAQ Objectives, and all existing government buildings with a construction floor area of more than 10,000 square metres should aim to achieve the Good Class wherever possible.

17. ***IAQ in government premises.*** According to the joint circular (see para. 16), regular updates would be sought from government bureaux and departments (B/Ds) on the progress made on government buildings in achieving the Excellent Class or Good Class of the IAQ Objectives. Audit however noted that, up to February 2011, no updates had been sought from B/Ds. *Audit has recommended that the Secretary for the Environment should issue guidelines to request B/Ds to: (a) conduct periodic surveys to ascertain the IAQ in their premises; (b) consider appropriate follow-up actions in their premises with IAQ not meeting the applicable level as promulgated in the joint circular; and (c) publish, as far as possible, on their websites the IAQ of their premises with reference to the IAQ Objectives.*

18. **Government premises joining the IAQ Certification Scheme.** Audit examination revealed that, as of December 2010, of the total 750 government premises served by MVAC systems, only 136 (18%) participated in the IAQ Certification Scheme. Audit also noted that, from 2004 to 2010, 121 IAQ certificates for government premises had not been renewed upon expiry. *Audit has recommended that the Secretary for the Environment should issue guidelines to request B/Ds to, as far as possible: (a) arrange for their premises to join the IAQ Certification Scheme; and (b) renew the IAQ certificates of their premises.*

19. **Funding arrangements for joining the Scheme.** From 2006-07 to 2010-11, the Electrical and Mechanical Services Department (EMSD) implemented IAQ improvement projects to facilitate 179 government premises to join the IAQ Certification Scheme. However, Audit noted that about 570 government premises served by MVAC systems were not covered by the EMSD programme. *Audit has recommended that the Secretary for the Environment should issue guidelines to request B/Ds to explore funding arrangements for carrying out improvement works to the MVAC systems of their premises not covered by the EMSD programme.*

The way forward

20. Audit noted that the IAQ Management Programme had not included major milestones and performance targets. *Audit has recommended that the Secretary for the Environment should (a) consider compiling an updated IAQ Management Programme, taking account of the findings of the 2006 Consultancy Study and the audit observations and recommendations in this review; (b) set timetables and milestones for implementation of the various tasks under the updated Programme; and (c) set up an effective mechanism to monitor the implementation of the updated Programme and report the progress, where appropriate, to the LegCo EA Panel.*

Response from the Administration

21. The Administration agrees with the audit recommendations.

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