

**Guidance Notes for the Management of Indoor Air Quality in Schools and
Guidance Notes for the Management of Indoor Air Quality in Elderly Homes**

Frequently Asked Questions

Implementation of the Guidance Notes

Q1. What are the effects of IAQ to students at schools and elders in elderly homes?

A1: When students are having lessons in classrooms, poor IAQ can lead to different health symptoms (e.g. headache, dizziness, stuffy nose, fatigue, tiredness, concentration problems, allergy, asthma, rhinitis, etc.), and affect the performance of students. Meanwhile, elders receiving care services often live or spend a considerable portion of their time in elderly homes every day. Some overseas studies have shown that poor IAQ in elderly homes could be associated with respiratory morbidity (e.g. chronic obstructive pulmonary disease, breathlessness, cough, wheeze, etc.). Therefore, maintaining good IAQ at schools and elderly homes helps safeguard the health of students and elders.

Q2. Why were the Guidance Notes for the management of IAQ in schools and elderly homes (GNs) developed?

A2: The purpose of the GNs is to help schools and elderly homes improve and maintain good IAQ by establishing and implementing a simple and practical IAQ management programme so as to safeguard the health of students and elders. For schools and elderly homes equipped with Mechanical Ventilation and Air Conditioning (MVAC) system, they can participate in the IAQ Certification Scheme for Offices and Public Places (IAQ Certification Scheme) and make reference to the guide for the IAQ Certification Scheme published by the Environmental Protection Department (EPD). IAQ label will be issued to the premises which is assessed and confirmed to comply with the IAQ objectives of the IAQ Certification Scheme. More details of the IAQ Certification Scheme can be viewed at this website:

<https://www.iaq.gov.hk/en/iaq-certification-scheme/>

Q3. How were the GNs developed?

A3: The EPD has commissioned a consultancy study with The Hong Kong University of Science and Technology to study the overseas IAQ management practice in schools and elderly homes, and measure IAQ in 45 and 30 local schools and elderly homes respectively. The information gathered provided the basis for developing the two GNs for schools and elderly homes respectively.

Q4. Is it mandatory for schools and elderly homes to follow the GNs?

A4: The two GNs are voluntary and not legally binding. However, to safeguard the health of students and elders, the Government encourages schools and elderly homes management/operators to proactively consider adopting the guidelines in the GNs so as to improve and maintain good IAQ in their premises.

Q5. What types of schools and elderly homes do the GNs applicable to?

A5: The GN for schools is applicable to government schools, estate and non-estate aided schools, direct subsidy scheme schools and private schools, including child care centres, kindergartens, primary schools, secondary schools and special schools. The GN for elderly homes is applicable to residential care homes for the elderly licensed under the Residential Care Homes (Elderly Persons) Ordinance and scheduled nursing homes under the Private Healthcare Facilities Ordinance, both of them provide residential care services for elders.

Q6. How should schools and elderly homes make use of the GNs?

A6: The GN comprises three parts. The first part provides background information, including the common indoor air problems and their governing factors in schools and elderly homes, and the health effects of poor IAQ. The second part introduces simple and practical guidelines to achieve good IAQ. The final part provides general tips to achieve good IAQ regarding different types of rooms and facilities. Schools and elderly homes can make use of the GNs to further understand the causes and mitigation measures of IAQ problems. Also, a template of “walkthrough inspection checklist” (checklist) is included in the GN to facilitate schools and elderly homes to develop their own checklist to suit their needs and actual situation for identifying air pollution sources and formulating appropriate improvement measures.

Q7. How should schools and elderly homes implement the IAQ Management Programme suggested in the GNs?

A7: Schools and elderly homes can first establish an IAQ team which is responsible for developing and implementing the IAQ Management Programme. The IAQ team could assign members (the inspectors) to conduct walkthrough inspections of the premises at least once annually, with the help of the specified checklist, to identify potential areas for improvement.

Q8. Who should be included in the IAQ team?

A8: The IAQ team may include staff who is/are responsible for daily maintenance of the air conditioners or general affairs, and be led by an appropriate management representative who understands clearly the guidelines set out in the GN. There is no requirement on the number of people constituting the IAQ team. For educational purposes, schools may also encourage students to participate in the

walkthrough inspection or work together to implement the IAQ management programme in school, which would promote their knowledge and awareness of IAQ.

Q9. We hope to improve IAQ but our staff do not have knowledge of IAQ and have no time and resources, what should we do?

A9: The GN provides basic knowledge for the management of IAQ, such as suggesting simple daily housekeeping, providing guidelines on the selection and use of indoor products, recommending regular maintenance of ventilation equipment and air-conditioning system, etc. It is not anticipated that the GN would induce significant demands in respect of resources and technical knowledge. If schools and elderly homes have any questions about the GNs, they may contact the IAQ Information Centre for assistance (Hotline: 2788 6177, Fax: 2788 6181, or Email: enquiry@iaq.gov.hk).

Q10. Are there any IAQ course or training recommended to our staff?

A10: The IAQ Information Centre website www.iaq.gov.hk provides a wide range of IAQ information, including booklets, leaflets, etc., for reference by the staff of schools and elderly homes. Also, the IAQ Information Center organises IAQ seminars for the public regularly and interested parties may call the IAQ Information Centre hotline at 2788 6177 for enquiries.

Q11. Are there any school which has been adopting the IAQ management programme already?

A11: Some schools and educational institutions equipped with MVAC systems have already obtained “Good Class” or even “Excellent Class” certification under the IAQ Certification Scheme, which has affirmed their efforts in improving and maintaining good IAQ. A full list of certified premises can be viewed at the IAQ Information Centre website: www.iaq.gov.hk.

Q12. Are schools required to report to the Education Bureau (EDB) or the EPD on the implementation details of the IAQ management programme (e.g. the identified indoor air problems and the solutions)?

A12: The GNs are voluntary in nature, schools are not required to report the details of implementing the IAQ management programme to the EDB and EPD. The EPD will carry out surveys to keep in view of the GN implementation situation in schools and elderly homes so as to collect data for internal evaluation.

Q13. Are elderly homes required to report to the Social Welfare Department (SWD) or EPD on the implementation details of the IAQ management programme?

A13: Elderly homes are not required to report the details of implementing the IAQ

management programme to the SWD or EPD. Nevertheless, according to section 24 of Residential Care Homes (Elderly Persons) Regulation, every residential care home shall, to the satisfaction of the Director of SWD, be adequately heated, lighted and ventilated. The SWD's Licensing Office of Residential Care Homes for the Elderly will provide relevant instructions or suggestions to improve the IAQ of the elderly homes based on individual circumstances so as to safeguard the health of the residents. Moreover, the EPD will carry out surveys to keep in view of the implementation situation of schools and elderly homes so as to collect data for internal evaluation.

Q14. If indoor air problem was found in the elderly homes and additional resources are considered necessary for improvement or follow-up works (e.g. to replace ventilation or air-conditioning system, to hire experts for assessing IAQ), is there any subsidy from the Government?

A14: The grants from the Lotteries Fund (LF) are normally used to meet non-recurrent commitments for constructions, fitting-out, renovations, and purchase of furniture and equipment (F&E) for premises occupied by Non-governmental Organisations (NGOs) providing welfare services. The Block Grant under the LF provided to the NGOs, including the provision of adequate and safe F&E, will assist them to maintain decent environmental conditions for their service units. The Block Grant may be used to fund minor works projects, including repairs, renovation, maintenance and minor improvement works for existing premises, and also replenishment of F&E, including the replacement of old F&E items (e.g. ventilation and air purifying equipment). As for the recurrent expenditure such as the maintenance fees of various equipment, it is outside the non-recurrent expenses to be funded by the Lotteries Fund.

Q15. If there is a need for schools to improve ventilation, or procure air purifiers and dehumidifiers, etc. to improve IAQ, how can they apply for funding?

A15: Aided schools which need to improve ventilation can make use of the Emergency Repairs or annual Major Repairs mechanism of the EDB to apply for replacement, procurement or maintenance services of relevant equipment, or they can make use of the Expanded Operating Expenses Block Grant (EOEBG) or the Operating Expenses Block Grant (OEBG) to cover expenditures incurred from procurement of equipment items such as air purifiers or dehumidifiers, etc. to meet the needs of schools. Similarly, kindergartens joining the Kindergarten Education Scheme can make use of the Premises Maintenance Grant to cover their expenses on the repair and maintenance of the ventilation and air-conditioning equipment. Details of the relevant funding have been uploaded to the following EDB's websites:

EOEBG/OEBG

<https://www.edb.gov.hk/en/sch-admin/fin-management/subsidy-info/ref-e-oebg-cfeg/index.html>

Kindergarten Education Scheme

<https://www.edb.gov.hk/en/edu-system/preprimary-kindergarten/free-quality-kg-edu/index.html>

Q16. If there is a need for elderly homes to procure or replace ventilation/air exchange equipment, air purifier, etc. to improve IAQ of their premises, how can they apply for funding?

A16: The SWD will invite applications from the NGOs each year for the Block Grant for the coming year. Upon approval of the application, the grant will normally be disbursed in equal instalments quarterly within the year concerned. NGOs can make use of the grant for the expenditures for the abovementioned scope under preset conditions. Common F&E items, including ventilation and air purification equipment, are provided in the “Reference Furniture and Equipment Lists” on the SWD website. For those NGOs which need to apply for Major Grants to cover their expenses on major renovation/repairs works or procurement of F&E, they may submit applications according to the requirements set out in the Lotteries Fund Manual. The Lotteries Fund Manual can be found on the SWD website (<https://www.swd.gov.hk>).

Q17. Can elderly homes apply for the “Innovation and Technology Fund for Application in Elderly and Rehabilitation Care” to procure IAQ improvement technology products for enhancing the living quality of elderly homes?

A17: The Government set up a \$1 billion “Innovation and Technology Fund for Application in Elderly and Rehabilitation Care” (I&T Fund) in December 2018 to subsidise elderly and rehabilitation service units to procure, rent and trial use of technology products so as to improve the living quality of service unit users as well as to reduce the burden and pressure of caregivers. Eligible NGOs and private organisations, which are receiving subsidies from the SWD and providing subsidised residential care services for the elderly or persons with disabilities (PWDs), community care and support services for the elderly, or day rehabilitation and community support services for PWDs, can apply for the I&T Fund. The application has been extended to all non-subsidised private and self-financing residential care homes for the elderly and persons with disabilities from September 2022 onwards. The SWD and the Hong Kong Council of Social Service, in consultation with various stakeholders, the Expert Group and Assessment Panel (AP), have jointly drawn up the reference list of “Recognised Technology Application Products” for reference by the organisation in the

consideration of procuring or renting of the technology products. For the innovative technology items to be procured, rented or trialed that are not in the reference list, the AP of the I&T Fund will decide whether to approve the applications with regard to the circumstances of individual cases. Details of the I&T Fund can be found at:

https://www.swd.gov.hk/en/index/site_pubsvc/page_supportser/sub_itfund/

Procurement of low-VOC Products

Q18. What are VOCs? What are the health effects of VOCs?

A18: Volatile organic compounds (VOCs) are a diverse group of organic compounds that evaporate at room temperature. In a typical indoor environment, there are over a hundred compounds, including formaldehyde, that can be classified as VOCs. Apart from new furniture, VOCs could be emitted from many sources such as cosmetics, cleaning agents, pesticides and tobacco smoke. Exposure to VOCs may result in both acute and chronic health effects. In sufficient quantities, VOCs can cause eye, nose and throat irritations, and even headaches, dizziness, visual disorder and many other impairments. Some VOCs, formaldehyde in particular, which can be found indoors are known human or animal carcinogens. As existing knowledge of the toxicological effects of VOCs and their mixtures is still incomplete, it is always prudent to minimise exposure to them. For more details, please see the “Volatile Organic Compounds and You” leaflet published by the EPD in the link below:

<https://www.iaq.gov.hk/wp-content/uploads/2021/04/leaflet-volatile-organic-compounds-and-you-final.pdf>

Q19. We generally procure daily use products of the lowest prices, how can we ensure that low-emission products could be procured?

A19: When procuring daily use products and services, schools and elderly homes can add green specifications and clauses in the procurement document to implement green procurement. The Government has been taking the lead to adopt a green procurement policy, and has uploaded useful information on green procurement (such as green specifications for items commonly used by bureaus and departments, green purchasing tips, overseas and local environmental labelling schemes, and electronic leaflets) to the website below for public’s reference so as to encourage the society to select environment-friendly goods and services.

https://www.epd.gov.hk/epd/english/how_help/green_procure/green_procure.html

Q20. We are going to procure new furniture for the schools or elderly homes, how to select?

A20: We suggest not replacing old furniture unless absolutely necessary. When

replacing old furniture, select solid wood furniture or furniture made of low-formaldehyde wood panels meeting European E1 standard, China GB18580-2017, the Japan F-Two Star, or similar standards, which emits relatively little formaldehyde and VOCs. For more details, please see the “New Furniture and Indoor Air Quality” leaflet published by the EPD on this website:

<https://www.iaq.gov.hk/wp-content/uploads/2021/04/leaflet-furniture-final.pdf>

Air Purifier

Q21. Can air purifiers improve IAQ?

A21: In general, air purifiers cannot completely solve IAQ problems. However, with effective control of pollutant sources and adequate ventilation, it will help improve IAQ. Air purifiers in general work on certain pollutants only and could not completely remove all air pollutants indoors. In addition, the effectiveness of an air purifier depends on a number of factors, such as its design and whether it is properly installed, operated and maintained, etc.

Ventilation Requirements Preventing the Spread of Infectious Diseases

Q22. Can the ventilation improvement measures in the GNs help preventing the spread of infectious diseases (including COVID-19)?

A22: The purpose of the GNs is to help schools and elderly homes improve and maintain good IAQ by establishing and implementing a simple and practical IAQ management program to identify and rectify IAQ problems. In general, maintaining good ventilation in an indoor environment would help reduce the risk of the spread of infectious diseases. However, efficient prevention and control of the spread of communicable diseases requires a combination of different measures to be implemented together, including disinfection measures, enhanced indoor air ventilation, proper personal hygienic practices, etc. For the purpose of infection control, please follow the advice and relevant guidelines issued by the Centre for Health Protection of the Department of Health as follows.

Residential Care Home for the Elderly

- Guidelines on Prevention of Communicable Diseases in Residential Care Home for the Elderly

<https://www.chp.gov.hk/files/pdf/>

[guidelines on prevention of communicable diseases in rche eng.pdf](#)

- Guidelines for Residential Care Homes for the Elderly (RCHEs) or Residential Care Homes for Persons with Disabilities (RCHDs) for the Prevention of Coronavirus disease (COVID-19)

<https://www.chp.gov.hk/files/pdf/>

[advice to rche rhd on prevention of nid eng.pdf](#)

- A Supplement on Ventilation: Guidelines on Prevention of Communicable Diseases in Residential Care Homes for the Elderly & Guidelines on Prevention of Communicable Diseases in Residential Care Homes for Persons with Disabilities

https://www.chp.gov.hk/files/pdf/a_supplement_on_ventilation.pdf

Schools

- Guidelines on Prevention of Communicable Diseases in Schools/Kindergartens/Kindergartens-cum-Child Care Centres/Child Care Centres

<https://www.chp.gov.hk/files/pdf/>

[guidelines on prevention of communicable diseases in schools kindergartens kindergartens cum child care-centres child care centres.pdf](#)

- Health Advice on Prevention of Coronavirus disease (COVID-19) for School

<https://www.chp.gov.hk/files/pdf/>

[advice to school on prevention of nid eng.pdf](#)

- A Supplement on Ventilation: Guidelines on Prevention of Communicable Diseases in Schools / Kindergartens / Kindergartens-cum-Child Care Centres / Child Care Centres

https://www.chp.gov.hk/files/pdf/supplement_on_school_ventilation_eng.pdf

General infection control measures

- Perform Hand Hygiene Properly

https://www.chp.gov.hk/files/pdf/guidelines_for_hand_hygiene.pdf

- Use Mask Properly

https://www.chp.gov.hk/files/pdf/use_mask_properly.pdf

- The Use of Bleach

https://www.chp.gov.hk/files/pdf/the_use_of_bleach.pdf

References

1. Common Indoor Air Pollutants and Health Effects

Indoor Air Pollutant	Source	Potential Health Effects	Measures to Improve IAQ
Carbon dioxide (CO ₂)	<ul style="list-style-type: none">• Human breathing• Tobacco smoking• Combustion sources	No significant health impact in general but causes sleepiness, and even headaches, dizziness and nausea at high levels	Provide sufficient fresh air supply and ventilation
Carbon monoxide (CO)	<ul style="list-style-type: none">• Combustion sources like cooking stove• Vehicle/engine exhaust• Tobacco smoking	Causes headaches, nausea, fatigue, rapid breathing, chest pain, decreased alertness/confusion/ impaired judgement and is even fatal at high levels	Avoid combustion in indoor environments or provide a separate exhaust system, maintain sufficient ventilation, and not to idle vehicles inside car parks
Respirable suspended particulates (RSP or PM ₁₀)	<ul style="list-style-type: none">• Combustion sources like cooking stove• Equipment like photocopiers and printers• Tobacco smoking• From outdoors	Causes irritation to eyes, nose, skin and, respiratory system, and sometimes allergic reactions	Clean and vacuum frequently, maintain ventilation systems properly, use proper air purifiers, and not to smoke indoors

Indoor Air Pollutant	Source	Potential Health Effects	Measures to Improve IAQ
Nitrogen dioxide (NO ₂)	<ul style="list-style-type: none"> • Combustion sources like cooking stove • Vehicle/engine exhaust • Tobacco smoking • From outdoors 	Causes irritation to eyes and respiratory system	Avoid combustion in indoor environments or provide separate exhaust systems, maintain sufficient ventilation, not to idle vehicles inside car parks, review fresh air intake points
Ozone (O ₃)	<ul style="list-style-type: none"> • Equipment like photocopiers, laser printers and fax machines • Air purifiers with high voltage discharge components 	Causes irritation to eyes and respiratory system, and chronic respiratory disease	Isolate ozone emitting equipment and provide exhaust gas system
Formaldehyde (HCHO)	<ul style="list-style-type: none"> • Pressed-wood furniture and products • Adhesives • Paints • Urea-formaldehyde foam insulation (UFFI) • Tobacco smoke • Incense burning 	Causes irritation to the eyes and respiratory system, and even lung damage at high levels; human carcinogen	Avoid using pressed-wood products, use low-emission furniture and renovation materials, and maintain sufficient ventilation

Indoor Air Pollutant	Source	Potential Health Effects	Measures to Improve IAQ
Total volatile organic compounds (TVOC)	<ul style="list-style-type: none"> • New furniture and furnishings • Renovation materials like paints and solvents • Consumer and aerosol products like cleaning agents, disinfectants, pesticides, cosmetics and fragrance products • Dry-cleaned clothes • Tobacco smoking 	Causes irritation to the eyes, nose and throat, and even headaches, dizziness, visual disorder, and many other impairments; some VOCs are human or animal carcinogens	Use no/low emission renovation materials and furniture, reduce the use of VOC-containing consumer products and aerosol products, maintain proper ventilation
Radon (Rn)	<ul style="list-style-type: none"> • Concrete building materials containing granite 	Causes lung cancer	Use sealant or wallpaper to cover up concrete materials, and maintain sufficient ventilation
Biological contaminants (bacteria, fungi/mould, viruses, dust mites)	<ul style="list-style-type: none"> • Dirty air conditioner/ventilation system filter and ducting 	Causes sneezing, watery eyes, coughing, shortness of breath, dizziness, lethargy, fever, and digestive problems; may trigger allergic or asthmatic reactions	Keep premises clean and dry, maintain good hygiene and good ventilation, and clean ventilation systems regularly

Indoor Air Pollutant	Source	Potential Health Effects	Measures to Improve IAQ
	<ul style="list-style-type: none"> Growth accelerated by inadequate ventilation, and damp and dusty environment 		
Mould	<ul style="list-style-type: none"> Growing rapidly on organic matter under wet and warm condition 	Causes allergic reactions to mould-sensitised individuals, e.g. headaches, sneezing, runny nose, red eyes, and skin rashes	Keep premises clean and dry, maintain relative humidity lower than 70%, fix water leakage/seepage problems, and clean up mould spots promptly
Environmental tobacco smoke	<ul style="list-style-type: none"> Smoking 	Causes respiratory irritation, adverse effects on the cardiovascular system and lung cancer	Quit smoking

2. Suggestions for Green Procurement

Green Procurement means purchasing products and services that cause minimal adverse environmental impacts. It incorporates human health and environmental concerns into the search for high quality products and services at competitive prices. Following are some examples of green specifications for products commonly used in Government procurement. The specifications are subject to update from time to time based on the latest market information. The latest and complete product green specification database can be found at the following website:

https://www.epd.gov.hk/epd/english/how_help/green_procure/green_procure.html

Product Category	Product Item	Recommended Green Specifications
Cleansing Products	<ul style="list-style-type: none"> • Laundry/ Detergent Soap • Hand Soaps 	<ul style="list-style-type: none"> • The product should not be formulated or manufactured with phosphate or phosphonates. • The product should be at least 90% biodegradable.
Building and Construction Supplies	<ul style="list-style-type: none"> • Flooring Materials 	<ul style="list-style-type: none"> • Total emission: Discharge of VOCs should not exceed 2 g/m². • Emission rate: Discharge of VOCs should not exceed 500 µg/m²/hr. • Emission of formaldehyde from the product should not exceed 0.13 mg/m³ of air.
	<ul style="list-style-type: none"> • Solvent-based/ Water-based Paint for Building Finish 	<ul style="list-style-type: none"> • The product shall comply with the VOC content requirements on regulated paints stipulated in the Air Pollution Control (VOC) Regulation of Hong Kong.

Product Category	Product Item	Recommended Green Specifications
Furniture	<ul style="list-style-type: none"> • Chair • Wooden Furniture 	<ul style="list-style-type: none"> • Formaldehyde emission: Wooden panels should be of Class E1 under EN13986 in respect of formaldehyde emission, and the emission of formaldehyde from the panels should not exceed 0.124 mg/m³ of air (by test method EN 717-1).
Office Equipment	<ul style="list-style-type: none"> • Facsimile Equipment • Photocopier 	<ul style="list-style-type: none"> • The emission from product operation should not exceed the ozone emission rate of 3 mg/h.

3. IAQ Service Providers

The latest IAQ service providers, including the “Accredited IAQ Certificate Issuing Bodies (CIB)”, “IAQ Contractors”, “IAQ Laboratories”, “IAQ Control Facility Suppliers”, and “IAQ Consultants” can be found at the following website:

<https://www.iaq.gov.hk/en/iaq-certification-scheme-iaq-service-providers/>

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4. Contacts Information

For further information, you may contact the following organisations:

Enquiry about the Guidance Notes

IAQ Information Centre

Tel. No.: 2788 6177

E-mail: enquiry@iaq.gov.hk

Website: www.iaq.gov.hk

Enquiry about the Lotteries Fund

Social Welfare Department

Subventions Branch—Lotteries Fund Projects Section

Address: Rooms 3601-02, 36/F, Dah Sing Financial Centre, 248 Queen's Road East,
Wan Chai, Hong Kong

Tel. No.: 2151 0573

Enquiry about the Innovation and Technology Fund for Application in Elderly and Rehabilitation Care

Social Welfare Department

Secretariat to Innovation and Technology Fund for Application in Elderly and Rehabilitation Care, Rehabilitation and Medical Social Services Branch

Address: Room 502, 5/F, West Coast International Building, 290-296 Un Chau Street, Sham Shui Po, Kowloon.

Tel. No.: 3188 2845