

Please note that the comments and guidance below are intended to be helpful - but cannot be exhaustive or definitive, and it is necessary for the individual to exercise their professional judgement and expertise when making design decisions. Where information is quoted from CIBSE Guidance this is to assist the readability of the response and it is important that the extract quoted should be seen in the context of the full written guidance in the quoted publication. As a CIBSE Member you have access to this through the [Knowledge Portal](#)

Friday 30<sup>th</sup> March 2012

Dear Mr Dooley,

Thank you for your enquiry and the information provided. We do appreciate that this is a subject on which you have spent considerable time and acted in a professional manner.

CIBSE guidance is generally regarded as best practice. Indeed our website specifically states: "CIBSE is the standard setter and authority on building services engineering. It publishes Guidance and Codes which are internationally recognised as authoritative, and sets the criteria for best practice in the profession. The Institution speaks for the profession and so is consulted by government on matters relating to construction, engineering and sustainability. It is represented on major bodies and organisations which govern construction and engineering occupations in the UK, Europe and worldwide. "

As such our guidance is referred to in many of the Building Regulations and in HSE guidance as good / best practice.

Whilst we cannot comment on specific design issues, we can give you information on what our guidance said at the time of the refurbishment you refer to.

Our guidance on fresh air requirements for offices at the time of the refurbishment in 2005 would be that provided in Guide A (1999) Table A1.1 which gives a suggested air supply rate of 8 litres per second per person assuming no-smoking. The fresh air requirement increases substantially if there is any smoking allowed, for example to 16 litres per second per person with some smoking.

Our current guidance in Guide A (2005) Table 1.5 states that the "suggested air supply rate per person" for offices is 10 litres per second per person, assuming no smoking. It is generally acknowledged that research has shown that the required fresh air per person has increased over the years to take account of pollutants such as outgassing from building materials, pollutants from office equipment and to prevent sick building syndrome etc.

Guide A (1999) also provides more information on the determination of the required outdoor air supply rate in section 1.7, with three different methods of determination/calculation given. For the simplest approach again a recommended outdoor air supply rate of 8 litres per second per person for no smoking is given in Table 1.10. It also specifically notes that "the outdoor air supply rates given in Table 1.10 assume that the outdoor air supplied to the space is fully mixed with the room

air. These rates should be adjusted if the ventilation effectiveness (see section 1.7.4) is expected to take a value other than 1.0.”

Section 1.7.4 (Guide A 1999) provides a table of ventilation effectiveness for different ventilation arrangements. With a low level supply zone and high level exhaust zone, i.e. displacement ventilation the ventilation effectiveness if the temperature differential between supply air and room air is greater than 2K is given as between 0.2 and 0.7.

Our current Guide A (2005) discusses ventilation and air quality in Section A8.4. Section 8.4.1.2 addresses regulatory guidelines and workplaces, says that the fresh air should not fall below 5-8 litres per second per person and says the higher ventilation rate of 8 litres per second is recommended. A reference is given to an HSE document on sick building syndrome (HSG 132 1995) which is still available on the HSE website and HSG 202 – ‘General ventilation in the workplace – guidance for employers’ 2000. This would have been current at the time of the Guide publication, but HSG 202 is no longer listed on the HSE website and we are unable to determine the date of removal or if there has been a replacement. HSG 132 and possibly also HSG 202 would have been current at the time you are referring to in 2005.

For your information, HSG 202 (2000) did reference CIBSE Guide A (1999) in section 32 and says in section 33 “A recommended fresh air supply rate of 8 litres per second per person should provide a clean and hygienic workplace in open plan offices, shops and even factories”

HSG 132 (1995) says in section 15: “Two broad objectives to aim for in planning are: to comply with published standards (including the Building Regulations 1991(ref 11) and those detailed in the Chartered Institution of Building Services Engineers (CIBSE) Guides(ref 13); and to direct effort cost-effectively towards the best possible working environment”

Sections 39 and 40 cover good practice for ventilation. Section 40 says “There should be a minimum fresh-air flow of 8 litres per second per person in no smoking areas ...” . The need to reduce draughts is also discussed, and it recommends measurements of both air velocity and volume flow rate.

We hope this information is of help to you.

Regards,

***CIBSE Technical***

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