

Lethargic in the office? Headache? High CO2 levels could be blame, warns KPMG

KPMG News 16 November 2007

Staff well-being and productivity levels in offices up and down the UK could be being adversely affected by high levels of CO2 in the air, KPMG has warned.

While scientists have long suspected a link between rising levels of CO2 in the outdoor environment and global warming, carbon dioxide can cause problems indoors too. High indoor carbon dioxide concentrations can cause headaches, eye problems, nasal symptoms, respiratory tract conditions and general feelings of fatigue.

Typical office levels are in the range of 600-800ppm (parts per million) – but a recent study by KPMG and Middlesex University conducted amongst 300 adults found that higher levels of CO2 could reduce concentration levels by as much as 30 percent. At levels above 1,500ppm, 79 percent of people reported feeling tired and above 2000ppm nearly two thirds of participants reported having no level of concentration. In addition, 97 percent of migraine sufferers reported symptoms at levels over 1000ppm.

KPMG's health and well-being manager, Julie Bennett, who conducted the research with Middlesex University, believes that high levels of carbon dioxide in offices are widespread:

"If workers are feeling lethargic, apathetic or unable to concentrate in the office, it may not be because of the routines and strains of their job – it could be because the levels of CO2 in the air around them are too high. I have taken readings in a range of company offices – as well as public buildings and schools - and it is not at all uncommon to find levels of well over 1000ppm. This is an issue that organisations need to take more notice of."

In modern office buildings – with sealed windows, draught exclusions and insulation – natural ventilation is minimal, causing air to be used, breathed and not replaced. This is not a problem with an efficient and well-controlled air-conditioning system – but can become a problem if a system is not well maintained or is poorly designed in the first place.

The ramifications can be considerable. The cost of poor air quality (in terms of sick absence and time dealt dealing with the problem/complaints) in a large government office with 2500 occupants was £400,000 a year at 1990 prices, according to evidence submitted to a UK parliamentary Select Committee on the Environment*

"Companies ought to be checking CO2 levels in their buildings," Julie Bennett said. "Otherwise staff well-being could be affected, and reduced levels of productivity could potentially cost a company thousands of pounds. CO2 levels could be one of the major contributory factors to so-called sick building syndrome."

KPMG is due to move into a brand new head office building in Canary Wharf in 2010. The building is being designed to high environmental and sustainable standards. One of the factors that KPMG will be taking into account is the level of CO2 in the building, and how to keep it to optimum levels for the comfort and productivity of staff. In its existing buildings, KPMG regularly monitors levels of CO2.

-ENDS-

Further information:

Mark Hamilton
KPMG Corporate Communications
020 7694 2687

Notes to editors:

The KPMG/Middlesex University research was conducted amongst 300 adults during March 2007.
For full findings, email: Julie.bennett@kpmg.co.uk

*The information submitted to the Government Select Committee was published by the following researcher:

Raw GJ, Whitehead C, Robertson AS, et al. A questionnaire for studies of sick building syndrome. TCR 6/95. Garton, Watford: Building Research Establishment, 1995.