



'Poor air quality can seriously damage your business health'



Richard Norman,
managing director,
Indepth Hygiene
Services and
Chairman of the
Building and
Engineering Services
Association – Ventilation
Hygiene branch

In April the threat of air pollution was blown into the public consciousness courtesy of a wind from the Sahara that gathered up industrial pollution from Europe and mixed it with our own, local pollution.

The result of this cocktail was pollution warnings broadcast alongside weather forecasts, and health warnings for those with lung and heart conditions, asthma sufferers and the elderly.

Not since the 1950s has air pollution caused so much concern.

But now it has, quite literally blown over, the irony is that indoor air quality in UK workplaces may be far worse than what was experienced recently across the South of England. We may be able to cope with a few days of outdoor pollution without too much difficulty, office workers can't escape 'bad air' that will impact on their health and productivity day in day out.

According to the B&ES Guide to Good Practice TR/19 – Cleanliness of ventilation systems, the limits of dirt/contamination above which cleaning would be recommended are: for supply/recirculation systems – 60µm; extract systems – 180µm; kitchen grease extract systems – 200µm as a mean across the system or 500µm in any single measurement.

Particles found in the air vary greatly in size. The greatest health hazard comes from the smallest particles – less than 10 microns across – which we can easily inhale into our lungs. Studies in the US and Europe show a correlation between levels of particles in the air and the number of people who die each year.

Particles can also reduce capacity to resist infection. Studies show that particles can increase the number of hospital admissions and emergency department visits, school absences, lost work days and restricted activity days.

In addition, poor indoor air quality is believed to have an important causative or aggravating influence on allergic



symptoms, chronic obstructive pulmonary disease, airborne respiratory infections, and cardiovascular disease. Building dampness and mould has been associated with an approximately 30 to 50% increase in a variety of respiratory and asthma-related health outcomes.

Under The Workplace (Health, Safety & Welfare) Regulations, building owners and managers have a legal obligation to ensure that enclosed workplaces are ventilated with fresh, purified air. And poor air quality can have a seriously detrimental effect on staff. It can affect employee performance due to lack of concentration, low energy levels and wellbeing, and can lead to an increase in sick days. Research has shown that the size of the effect of poor air quality on most aspects of office work performance appears to be as high as 6–9%.

In 1983, The World Health Organization (WHO) defined sick building syndrome as a disease caused by exposure to low levels of indoor air contaminants on a recurring basis

In the WHO European Region alone, exposure to particulate matter (PM) decreases the life expectancy of every person by an average of almost 1 year, mostly due to increased risk of cardiovascular and respiratory diseases, and lung cancer.

The WHO also states: "Healthy indoor air is recognized as a basic right. People spend a large part of their time each day indoors: in homes, offices, schools, health care facilities, or other private or public buildings. The quality of the air they breathe in those buildings is an important determinant of their health and wellbeing. The inadequate control of indoor air quality therefore creates a considerable

health burden. Indoor air pollution – such as from dampness and mould, chemicals and other biological agents – is a major cause of morbidity and mortality worldwide."

According to the WHO the prevalence of symptoms of the sick-building syndrome has been associated with the characteristics of heating, ventilation and air-conditioning system. On average, the prevalence of such symptoms is higher in air-conditioned than in naturally ventilated buildings, independent of humidification (Mendell, Smith, 1990; Seppen, Fisk, 2002). The evidence suggests that better hygiene, commissioning, operation and maintenance of air-handling systems is particularly important in reducing the negative effects of heating, ventilation and air-conditioning systems (Mendell, Smith, 1990; Sieber et al., 1996; Seppen, Fisk, Mendell, 1999; Mendell et al., 2003, 2006, 2008).

In his report, Derek J. Clements-Croome, Professor of Construction Engineering, The University of Reading, UK says: "It is a much higher cost to employ people than it is to maintain and operate a building, hence spending money on improving the work environment is the most cost effective way of improving productivity – Premises costs for maintenance, energy, cleaning and administration are only about 5% of staff costs." He also believes that productivity could be improved by 4 to 10% by improving the office environmental conditions.

Absenteeism costs the UK economy £12bn every year. A large proportion of these incidents will be caused or at least exacerbated by poor indoor air quality.

The evidence is clear, fighting pollution from the inside will improve not only the health and performance of your employees, but your business too.

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