

Clean Air Day highlights health case for better ventilation

4 years ago



The important role played by mechanical ventilation systems in protecting human health was a central theme of this year's [National Clean Air Day](#) on June 16.

Research released by the event's organiser Global Action Plan established for the first time that air pollution affects every major organ in the human body, but that most people think it is only harmful to their lungs.

An air monitoring exercise carried out by the national news website [Mail Online](#) in collaboration with ventilation company [Nuaire](#) also revealed potentially harmful indoor pollution in hospitality, transport, and office buildings around London. Some of the results were described as 'scary' – with particularly high readings for volatile organic compounds (VOCs) and particulate matter (PM).

The studies emphasised the importance of turning indoor spaces into 'safe havens' designed, operated, and maintained to limit human exposure to airborne contaminants, harmful gases and diseases, according to the [Building Engineering Services Association](#) (BESA).

[A webinar hosted by the Association](#) also analysed the indoor air quality (IAQ) of multiple sites around the country with experts calling for much wider use of existing techniques for controlling and diluting pollution inside buildings.

"49% of people think air pollution is connected to worsening asthma symptoms...and 44% also rightly connect it to poor lung function development, 42% to bronchitis, and 35% to lung cancer," a Clean Air Day statement said. "However, only 12% of the population associate it with strokes, 10% with dementia, and 18% poor brain development."

Threat

Yet it is “the biggest environmental threat to our health” according to leading air quality and health expert Professor Stephen Holgate of Southampton University.

“Even though we can’t see it, air pollution impacts our health from our first breath to our last,” he said. “When we breathe polluted air, it can inflame the lining of our lungs and get into our bloodstream ending up in the heart and brain.

“Air pollution is a public health crisis.”

The BESA webinar focused heavily on the need to improve the maintenance and operation of existing ventilation systems, which could be addressed with better awareness and education about the extent and nature of the problem.

Nuaire board director Stuart Smith said the sites visited by the Mail Online almost certainly had ventilation systems, but they were not doing their job effectively. “Some of the results are staggering with huge spikes in VOC and CO2 readings in popular hospitality venues at relatively quiet times of the day – so we can only imagine what they must be like when they are busier.”

“We are sure these buildings have ventilation systems, but how well maintained and managed are they?”

More long-term monitoring of IAQ using increasingly sophisticated devices can help building operators improve their understanding of the problem, according to Mazen Jamal from Airthings for Business.

“You need more than just a snapshot of what is going on to fully understand the underlying issue as the levels and types of pollutants change continually,” he said. “That is why we are starting to see greater take-up of monitoring on a subscription basis, so users pay for long-term measuring that can inform their maintenance strategies.”

The BESA panellists agreed that upgrading ventilation should be tackled as part of the government’s push for net zero, which will require most buildings to be refurbished and/or retrofitted with more effective building services technologies.

One example would be wider use of mechanical ventilation with heat recovery (MVHR) systems, which “kill two birds with one stone”, according to Smith, because they provide air filtration while reducing the amount of energy needed to heat the building.

Consequences

Many ventilation systems now include automated controls that help to manage the air quality and Hern Yau of Mitsubishi Electric said this would play an increasingly key role. However, he added that it was also important for end users to be able to see IAQ data, so they recognise that their own action (or inaction) had consequences.

This, along with many other practical measures for turning buildings into safe havens from air pollution, are contained in [three pieces of free guidance](#)* produced by BESA since the start of the pandemic.

“People are getting away with murder – literally!” said Nathan Wood, chair of BESA’s Health & Well-being in Buildings group. “We have regulations, but people don’t check – and there is too much wriggle room

anyway, which means people get away with using the cheapest option rather than the right one.

“We have been talking about this for years, but we have just had a pandemic, the Grenfell Tower fire was five years ago and now we have an energy crisis. What else do we need to make people sit up and start doing the right things to make buildings safer, healthier, and more efficient?”

*All three BESA guides can be downloaded for free from: www.theBESA.com/iaq