What is the future for indoor environment quality (IEQ)?

Following our successful “Game of Moans” seminar in London on 12th March 2019 based on the battle between people, plant, performance and perception for our building services, we continue our series of white papers by looking at the future for indoor environment quality (IEQ).

Workplace wellbeing is high on the agenda for those managing buildings. Therefore aspects such as air and water quality, occupancy comfort, noise and lighting remain very visible from a health and wellbeing perspective.

Then factor in the equally high profile areas of nutrition, mental health, drug and alcohol use/abuse, exercise and sustainability – to name but some – and what we see is an increase in different departments wanting more tangible information about a greater array of topics.

With agile working, standards, tech, wearables and user expectation also changing, read on to look at what you should be considering and how you can continue to demonstrate the quality of your building’s indoor environment.
What is the future for indoor environment quality (IEQ)?

1. Standards and IEQ

From a health and safety perspective we already have a range regulations and supporting standards in place including (but not limited to):

- The Workplace (Health, Safety and Welfare) Regulations 1992;
- Control of Substances Hazardous to Health Regulations 2002;
- The Control of Noise at Work Regulations 2005;
- The Health and Safety (Display Screen Equipment) Regulations 1992; and
- EH40/2005 Workplace exposure limits.

These cover everything from ventilation, particulates and noise, to light, microbiological contaminants, drinking water and gas levels. But there is also much in the way of guidance and information on how our buildings should be performing, from design and commissioning details to the Chartered Institution of Building Services Engineers (CIBSE) recommendations for operational performance.

More recently we have also seen the introduction of for example “Well”, “Fitwell”, “NABERS”, “BREEAM” and “The Workplace Wellbeing Charter”. Each of these is looking to combine elements of the building, with for example nutrition and nourishment, provision of services, exercise and movement, process and procedures, inclusivity and support to provide an index of performance.

Standards have also changed with published EH40 workplace exposure limits for gases such a Carbon monoxide and nitrogen oxides having been reduced or reintroduced respectively.

Even from a slightly tangential view the United Nations Global Goals for Sustainable Development the subject is covered, with Goal 3 “Good Health and Wellbeing - ensuring healthy lives and promoting the well-being at all ages is essential to sustainable development” including aspects such disease (including cardiovascular and respiratory), drinking water, hygiene and air pollution.

For some of these standards your organisation may already be exploring or have adopted them, but the majority have as yet not. Even so the output information from your building environmental performance will be needed. What are you currently gathering?

- How are you gathering your building performance information and is it independent, verifiable and reliable?
- Have you considered setting your own performance standards for your building environment?
- Do you ever proactively publish your building performance data?

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We can now do more in more places than ever before and as technology advances this trend looks like it will continue.

From a work perspective, workstyle can be at home, out of the office (café, customer site, service station, serviced office) and in the office a whole host of different environments/spaces can be offered - creative, quiet, meeting, stand up, sit down, touchdown, hot desk or fixed! This flexibility may provide significant benefit to employees and their welfare, but potentially it can lead to issues too that need to be managed. For example:

- Background noise levels can be much more intrusive in some areas than others. Overall levels of light can also vary significantly with in particular "out of office" locations having the type and level of lighting designed for a different purpose.
- Musculoskeletal issues, particularly back and upper limbs (which account for over 80% of disorders according to the 2017/18 Health and Safety Executive (HSE) figures) can be the most affected with different styles of workstation or the increased amount of incidental carrying people do potentially.
- For those working increasingly away from the office or at home, provision of equipment, information security and how these are managed can also come into play.

On the one side you can let your creative juices flow and look to provide the dynamic, fun and productive working environments your employees and the organisation will benefit from. On the other, make sure your policies and procedures are integrated so line managers, IT, H&S, HR and Facilities are working together to best effect and promote them.
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3. Users and IEQ

Air quality and occupancy comfort are some of the biggest causes of user dissatisfaction with the workplace. Be it dust, bacterial, thermal comfort, draughts or “feeling unwell” the office is never far from the top of the list of culprits.

One of the more recent developments has been to turn this often erroneous assumption on its head. It is true poorly commissioned, maintained and operated buildings, or for example overpopulated space can and does lead to complaints. But more often than not a well-run well maintained building provides a pleasant and productive space.

This recognition and the movement from the perception that the work environment makes us ill to one where it promotes productivity - the days of Sick Building Syndrome to wellbeing – needs to be built on.

Not everyone will be happy all the time, but as the HSE recognise and have been quoted as saying "best that you can realistically hope to achieve is a thermal environment that satisfies the majority of people in the workplace, or put more simply, 'reasonable comfort'. The HSE considers 80% of occupants as a reasonable limit for the minimum number of people who should be thermally comfortable in an environment”.

The uptake of wellbeing is also one that resonates with facilities as well as the wider business. In 2016 the now IWFM Sustainability in FM survey highlighted wellbeing and social value as two major areas that would have an impact on organisations over the next decade. By 2018 the survey found over 40% of organisations had KPI/targets in place to measure wellbeing, for social value it was less than 20%.

- How many regular helpdesk requests relating to an employees workplace environment or wellbeing do you have and how do you manage them?
- Do you have any defined/documented welfare/well building standards?
- Do you have any wellbeing initiatives in place and how are they currently being managed?
- What aspects of your building environment do you monitor (temperature, humidity, air change rates, independent reports etc.) and what could you be doing to proactively promote it to your occupants?

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4. Tech and IEQ

Technology provides us with more opportunity to measure more than ever before. From utilisation levels and occupancy times to temperature, dust and gas levels all can now be assessed 24/7.

There are a multitude of solutions for sensors as small as a stamp which can integrate to any of your existing monitoring systems. They can also provide real time feedback for the user and the building manager; however a word of caution is needed. Firstly, the number and location of your sensors can have a significant effect on the information you get back. Similarly the accuracy of the measurement will be affect by the sensor range and any drift and so calibration frequency is required.

The solution is to check your sensor readings against independent measurements taken with verifiable and calibrated equipment preferably by an organisation accredited to UKAS 17025. This has the double benefit of providing you with accurate information you can rely on, but also provide feedback on how your other building management systems are performing.

- What is your current strategy for monitoring your indoor environmental conditions and what does it include (air quality, occupancy comfort, noise, light)?
- How are you ensuring you have reliable and verifiable information from your current management systems?
- Do you use any form of independent assessment of your building environment?

Assurity Consulting are leading experts in workplace health, safety and environmental compliance. Our workplace environmental assessment service can give reliable information on your working environment to make sure your buildings are supporting a productive environment, working to industry guidelines. For more information, please contact us on tel. +44 (0)1403 269375 or email us. info@assurityconsulting.co.uk