

Geeks bearing gifts

The future of smart buildings promises benefits for those who can tap into the new era of connected systems and the IoT. But Karen Fletcher warns that there is a lot of hard work required for those to want to step into this new world.

Building controls is probably the fastest-moving sector of building services. In recent years there has been a major acceleration in the number of products and services available, accompanied by burgeoning technical developments such as the Internet of Things.

The upshot is that there are more companies jumping into the field offering new solutions for a range of problems – from data analytics to wireless connectivity, from space optimisation to energy usage tracking. It's fair to say that whatever you want your building management system to do is available. Your only problem as a building owner is deciding just exactly what it is that you want.

And the challenge is not only one for those buying the new technology. The new tech also needs new approaches from the controls industry too. The Internet of Things offers many potential benefits but users, designers and installers alike will have to work hard to make the most of its capabilities.

In fact, it's fair to say that the next generation of building controls pushes that section of building services closer to IT – which has benefits but also major challenges for those working in the industry.

At this year's Smart Buildings Show (Olympia, 9th and 10th October) Katherine Farrington of Google spoke about 'Smart-ready buildings'. The fact that Farrington is an IT expert rather than the traditional facilities manager, is significant.

Farrington has a global role in Google's buildings to ensure that the building controls work in way that suits the company's buildings IT strategy. And she points out that the controls industry (and its clients) face a number of challenges as controls technology evolves.

"What is a smart building to you?", she asked in her presentation. "There are a lot of different answers. But we can say that five years from now a smart building will be different from what it is today."

Farrington sees three major challenges for today's building controls sector:

- * Cyber security – which is something that more controls specialists are talking about, but which is still not taken as seriously by end users as they do other aspects of corporate IT.
- * Scale – for clients with more than one building or who work on a global scale (like Google), the need to apply standard approaches is very important, but currently very difficult.
- * Insights – Farrington pointed out that it's vital to be able to justify expenditure on technology, and to drive value. Being able to demonstrate that is vital for the industry if it is to thrive.

One of the biggest problems for end users continues to be proprietary systems. Farrington said: “A lot of devices are proprietary and manufactured in a proprietary way. We could have thousands of different devices and pieces of software. How do we update those devices?”

A recent report from global smart buildings research specialist Memoori also reflects this view: “The future is open standards. Adoption of an open data management and systems procurement strategy will help ensure a much greater degree flexibility for the integration of new systems and applications into the smart building, as well as helping reduce costs, implementation time and overall complexity of communication architectures.”

This challenge of updating software is another IT-related issue that is not often considered by today’s controls device manufacturers or buyers. As we move into the era of the Internet of Things, and controls systems become more sophisticated, the need to update software is crucial.

“We need to think about the life cycle management of IoT devices and the next generation of these devices needs to work differently,” said Farrington. She pointed out that many devices have software that is very out of date, simply because no one has really thought about how updates might work.

Increasingly, devices that are viewed as building services will have to meet the kind of expectations that are already common in IT equipment. For building owners, this also brings the challenge of understanding exactly they want their controls systems to do. Farrington says that this includes asking questions about software updates – probably something that very few are even considering at the moment. “More people need to ask these questions and they need to ask about open standards and protocols,” advised Farrington.

Users should also be more aware of how IoT-ready devices work. “You don’t need all the data from a device. For example, we had a fan coil that had 200 data points but we only needed 20. Be aware of what your requirements are,” advises Farrington.

One of the most important points that Farrington made is that ‘smart’ is not an add-on that can wait until a building is almost complete. “Why do we tag on smart building,” she asked. A truly smart building has these technologies included right from the early stages of design. Again, this is reflected in the latest Memoori research which says: “The most cost effective means of smart solutions delivery for developers working on new build projects will involve embedding the technology delivery plan into the building design at an early stage, before what has previously been the norm.”

There is absolutely no doubt of that control systems that can harness IoT capabilities to offer building owners and users a more effective, efficient and productive space. But reaching that goal successfully will inevitably require change in the way the construction industry works – which is something it has not always been good at.

Professionals in the field of controls need to bear in mind that they are moving ever-closer to the world of IT, where performance expectations are different. Security and software

updating need to go on the list of product features. And for specifiers and installers, the time is ripe to start upgrading your skills. Even clients need to start looking at their controls systems in a new way. As Farrington said: "We need specifiers who can work across HVAC and IT." As the two areas converge, there are opportunities and challenges to grasp.

** See www.memoori.com for the latest reports on controls and the IoT*