![Johnson Controls]

Open**Blue**
Pioneers

Microsoft Beijing West Campus

AI improves energy efficiency and air quality at Microsoft's headquarters in China

Microsoft is one of the world's leading tech firms. So, it's no surprise to find that it's deploying digital solutions to accelerate its sustainability initiatives in Beijing.

Challenge

Microsoft Beijing West Campus is the headquarters of Microsoft in China. More than 3,200 full-time employees work on site in the capital's Haidian District – the heart of China's technology industry.

The real estate and facilities team there is transforming the company's nearly 150,000 square meter campus into an energy-efficient workplace and improving the quality of the indoor environment for the benefit of employees and their visitors.

The team began by migrating the applications and data from various systems – including power supply, building controls, energy management and smart management – to Microsoft's cloud-based Azure platform to create a centralized

'digital brain' for the campus. "We are already using the most comprehensive and trusted SAS cloud platform to support digital transformation," says Doreen Deng, Vice President of Microsoft Greater China and Global Partners Solutions Lead.

This improved efficiency, but they knew they would have to enhance Azure to make additional savings and further reduce carbon emissions.

They're now stepping up their efforts in collaboration with Johnson Controls. The team is using our Metasys building automation system to monitor heating and cooling equipment, and our artificial intelligence-enabled OpenBlue Enterprise Manager to provide extra data analysis and insight generation capabilities.

Solutions

Together, the technologies are accelerating the company's decarbonization efforts. They give the team the ability to measure the efficiency of key equipment, such as the cooling tower, which uses water to transfer process waste heat into the atmosphere. "For energy-efficient operations management, we needed technology that could capture the numbers," Kaijun Chen, Senior Portfolio Manager, Microsoft Beijing West Campus, RE&F China, Microsoft explains.

The power behind **your mission**

OpenBlue Enterprise Manager gathers and analyzes real-time data to enable the team to monitor usage and uncover further efficiencies. "Over time, we can now see trends, and identify the best opportunities for savings," Kaijun Chen says. That includes improving the performance of building equipment by using AI to predict faults and optimize energy use.

Healthy indoor spaces

The team in Beijing also wanted to use technology to improve the health and comfort of building occupants. Air quality in the capital has improved significantly in recent years but can still reach a level that can be detrimental to people's health.

Hundreds of air quality sensors had been deployed across the campus to capture data on indoor and outdoor air quality (measured as a PM2.5 μg/m3 level, or the amount of particulate per cubic meter of air), but the team needed to be able to make sense of the information it was gathering. OpenBlue Enterprise Manager provides real-time insight into conditions on the site and even into specific areas of the buildings, for example, a particular meeting room. OpenBlue Enterprise Manager can also monitor the average concentration of carbon dioxide in the air and humidity levels.

That enables the team to take action if the level of pollution exceeds the desired level, for example, by boosting the flow of fresh air into the building. "It takes around 30 mins to lower the number [of PM2.5 μg/m3], so when outdoor air pollution is really bad, we'll start this process at 6 a.m. before people start working," says Kaijun Chen.

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>
> **Kaijun Chen,**
> **Senior Portfolio Manager,**
> **Microsoft Beijing West Campus,**
> **RE&F China, Microsoft**

Results

Microsoft Beijing West Campus has combined its cloud-based technology with the Johnson Controls smart building automation system and AI-enabled technologies to increase efficiency, reduce emissions and improve people's experience of their workplace.
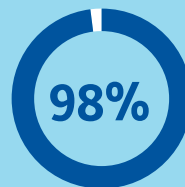
It's achieved annual energy savings of 27.9 percent. The deeper insights enabled by the technologies have also helped the campus achieve more than 98 percent uptime of key equipment and increased the level of operational automation.

12-year partnership with Microsoft Beijing West Campus

Near 30% reduction in energy consumption

98%

98% uptime achieved

Significant improvement in air quality

Find the next generation of smart building technology at https://www.johnsoncontrols.com/digital-solutions

About OpenBlue

OpenBlue is a complete suite of connected solutions that serves industries from workplaces to schools, hospitals to campuses, and beyond. This platform includes tailored, AI-infused service solutions such as remote diagnostics, predictive maintenance, compliance monitoring, advanced risk assessments, and more. A dynamic new space from Johnson Controls, OpenBlue is how buildings come alive.

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