

This Frighteningly Smart Office Building Knows Exactly What You Want, When You Want It

The Edge may be the most connected—and greenest—office anywhere in the world. Is this the future of working?

When you pull up for work at Deloitte's new office building in Amsterdam, the garage automatically recognizes your car or bike, opens the gate, and guides you to a parking spot and a free electric charger. The office app assigns you a desk, based on your schedule for the day and whether you're in the mood for a standing desk or a place to concentrate. Once you start work, you can use the app to tweak the lighting or heat until it's just right.

Welcome to the Edge, the most connected office anywhere. The building's massive network of sensors—around 40,000—is unprecedented, but happened partly by chance.

"We were in a bit of a competition to see if we could make the most sustainable building in the world," says Coen van Oostrom, CEO of OVG Real Estate, the building's developer. To break the record (measured by BREEAM, a U.K. rating system similar to LEED in the U.S.), they needed so-called "innovation credits" for attempting something new, far beyond things like the usual solar panels and rainwater harvesting.

So, using products from Philips, they hooked up every light in the building to Ethernet cables that also deliver Wi-Fi. "Every light has its own IP address," he says. The lights can sense when space in the building is unoccupied, and turn down the heat to save energy. The new system



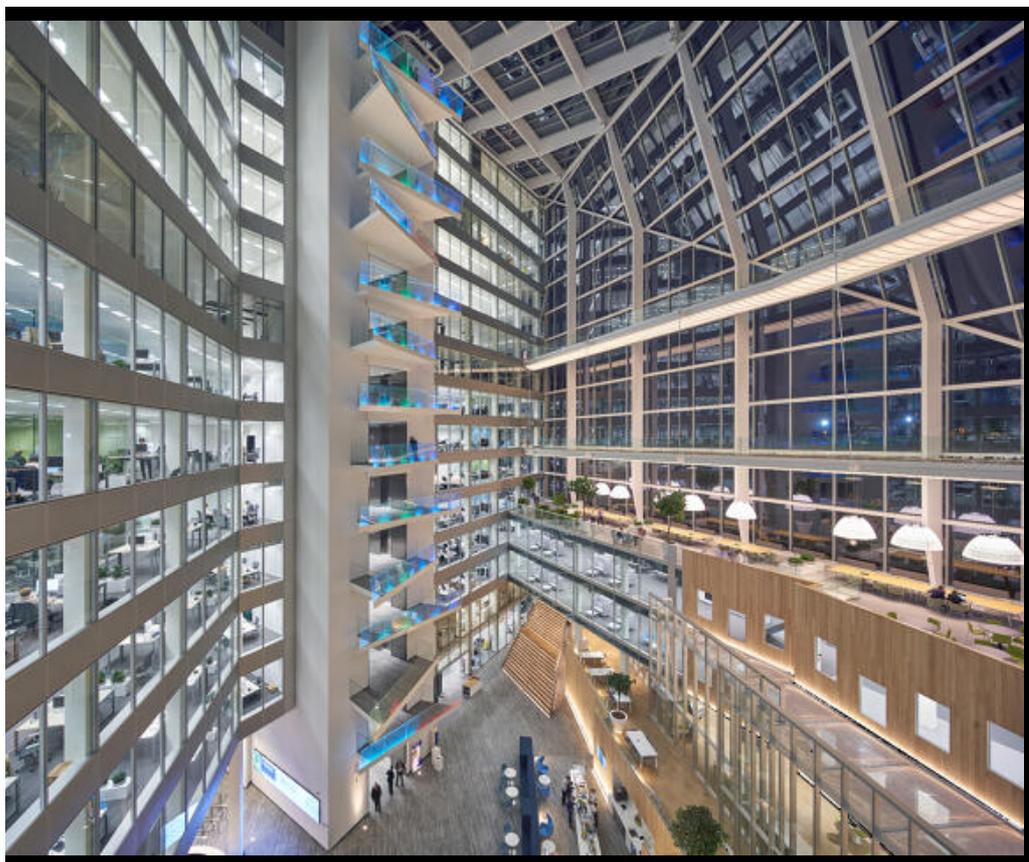
helped earn the design a record-breaking sustainability score. (Though another office building, in the U.S., recently claimed the title of "greenest high rise in the world"—because of different rating systems, it isn't clear exactly which is more sustainable.)

The new sensors also had unexpected benefits; as they feed information about light, heat and motion back to the cloud, they're also helping companies discover things they'd never considered.

"With big data, we suddenly had the ability to completely understand how people use the building," says van Oostrom. "We can do things that we didn't expect when we started. A cleaning lady who works in this building now has a heat map on her smartphone telling her what toilets have been used and what toilets have not been used. There's a whole new world of wonder coming from this connectivity that we didn't discover before."

The building knows when the espresso machine needs to be refilled in the break room (the app also remembers how you like your coffee). Towel dispensers in the restroom track use, and ping janitors when it seems especially busy and toilets might need to be cleaned. The on-site gym tracks your progress through the app.

The app also connects to other services. If you're hungry at the end of the day, you can choose a meal and the number of people you need to feed, and a paper bag with the exact amount of ingredients needed will be delivered to a fridge in the building's basement.

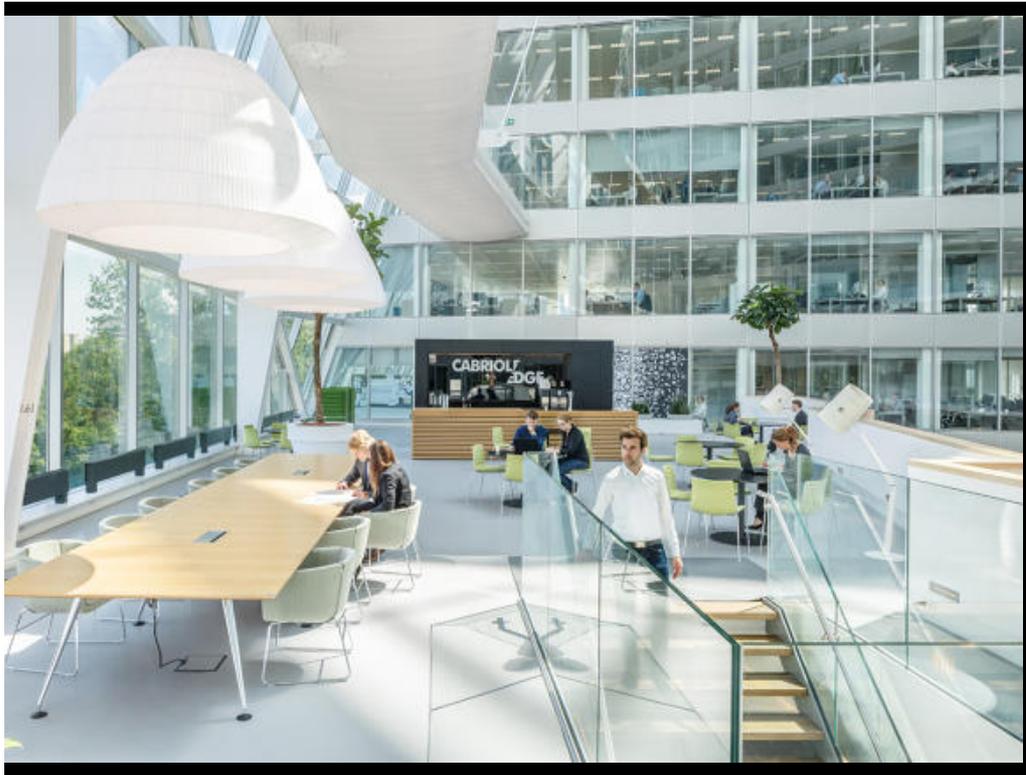


"You pick it up there, you go home, and within 10 minutes you can have a perfectly cooked meal with zero waste," van Oostrom says. "You don't need to go to the grocery store."

The building's connected systems also help save space, since employees don't have to use assigned desks. "If you see an average office building in the world, you can see that these buildings are 30% to 40% empty many times in a day," he says. By using the app to give employees desks only as needed—a.k.a. hot-desking—the building can accommodate more people in a much smaller footprint.

Despite the fact that the building tracks everyone's move, there are no nefarious Big Brother plans here. A boss, for example, doesn't have access to data about when an employee's car pulled into the parking lot, or how long they've been sitting at their desk. The system isn't intended for individual data collection, but for looking at patterns of usage as a whole.

OVG, also based in the building, is using the data collected so far to start planning its next project—an even more connected office. "We now see, what's basically coming back from all the big data, that we can design buildings even in a better way than we've done before," van Oostrom says. For example, they've already learned that they need even fewer desks than they originally thought.



The company is also planning to take sustainability even further with its next development, a mixed-used office and apartment building. That's saying a lot, because the Edge is already ultra-sustainable. It uses so little energy that it can actually produce more power than it needs through solar panels; exercise bikes in the on-site gym provide a little extra power when people ride. Rainwater is used to flush toilets and water the garden. A huge thermal storage system, drilled into the ground under the building, stores water for heat in the winter. An enormous atrium fills the office with natural light and provides natural ventilation.

But OVG wants to do more. "We basically make buildings in a very linear form," van Oostrom says. "We have an architect design something, we build it, we use it for 30 or 40 years, and then we demolish the building again and throw away the material." Instead, he says, buildings can be designed for the "circular economy"—with materials that will be reused. For the next building, OVG will use a facade that can be rented for 30 years. Then the manufacturer will take it back and recycle it into a new one.

"That is for us basically the last big step that we can take in making buildings in a way that they don't have any negative footprint on this earth anymore," he says. "The energy part we solved already. The material part we want to solve next. Cities in the future can be smart and have zero impact on society."

Connectivity will be part of that transition, he says, and it may soon be widespread. "We think that in five or 10 years all office buildings in the world will be completely connected."

[All Photos: via OVG Real Estate]



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3 COMMENTS

MELIN CONSULTANTS > ADELE PETERS 3 MONTHS AGO

Did you know the Edge scored 98.36%, this is the highest ever recorded! <http://www.melinconsultants.co.uk/suitably-sustainable-design-the-edge-amsterdam-13.html>



Link Reply

BARCLAY POLLAK > ADELE PETERS 3 MONTHS AGO

The mixed use apartment/office building sounds interesting? Talk about taking telecommuting to the extreme. <http://blog.tdsbusiness.com/products/designing-spaces-for-todays-high-tech-hobos/>



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GARETH DAVID > ADELE PETERS 3 MONTHS AGO

Seems like the implementation of a basic self organizing feature map... have worked on similar systems probably a decade ago...



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