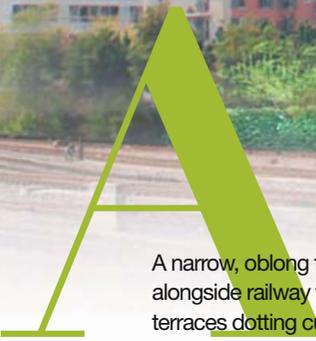


Green Office enters a new era

After Meudon, Rueil-Malmaison.
Another Green Office has
blossomed just west of Paris.
A plunge into positive energy 2.0.



A narrow, oblong form stretching alongside railway tracks. Loggias and terraces dotting curved façades amid trees in blossom. Seen from the sky, a blue and white bird flying toward the La Défense business district. After Green Office Meudon, inaugurated in 2011 and occupied by the IT services company Steria, Green Office Rueil will be the new home of Unilever's 1,000 employees, who currently work a couple hundred meters away. They will move into 20,000 of the total 35,000 sq. meters in November 2014. Nearly twice as large as the Meudon site, Green Office Rueil is entirely divisible in two parts and will

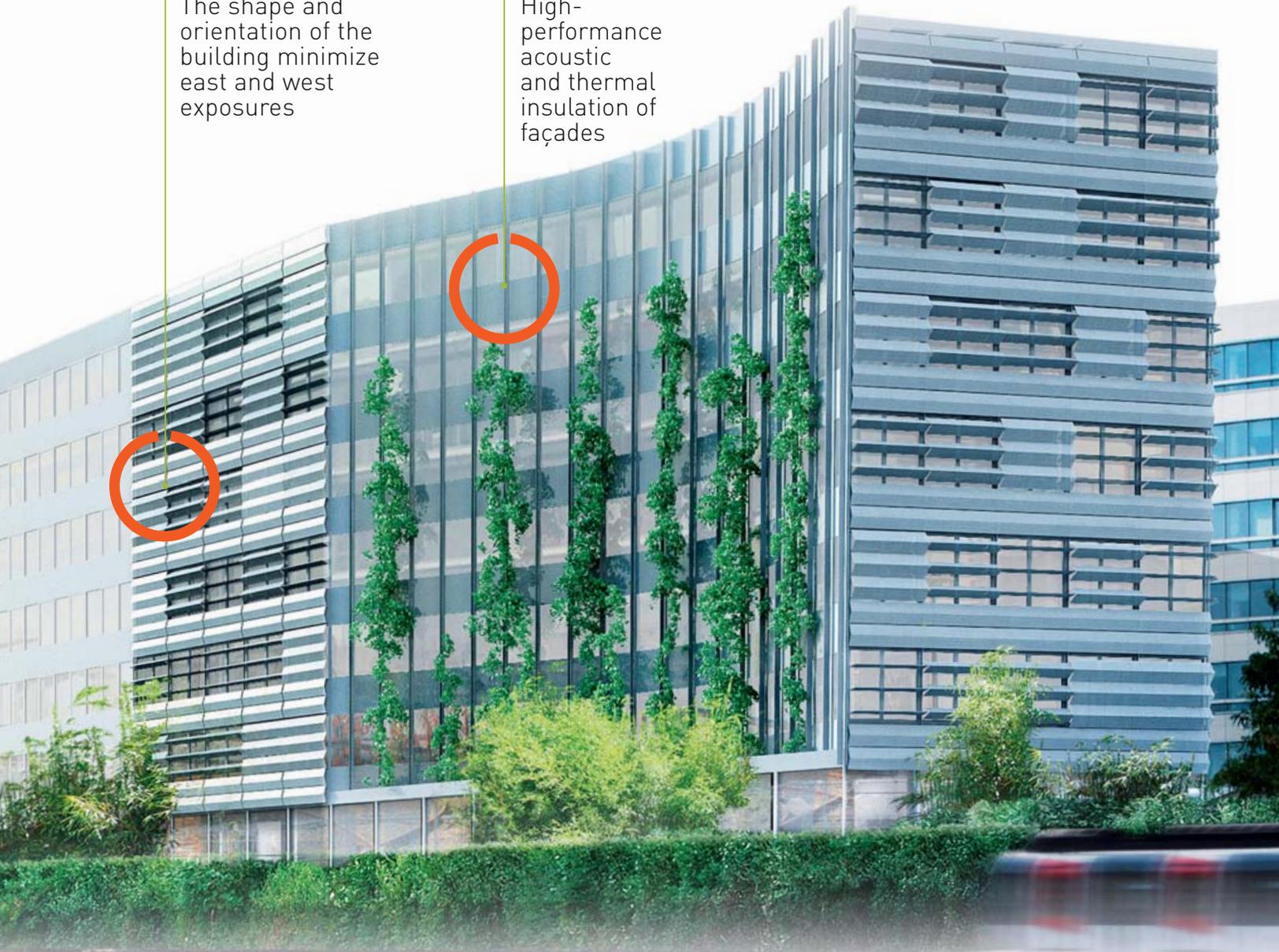
have not one, but three occupants. Unilever, the first to arrive and the one with the most employees, was involved from the beginning in this innovative project. It will occupy the east half of the building (the portion already sold), and at its request, will share with its co-tenants the 2,700 sq. meters of service space containing such facilities as the staff canteen and cafeteria, concierge service, fitness center, hairdressing salon and a conference room. The 600 employees of the engineering firm Ingerop and the 400 of another company will soon be sharing the west building.

Objective: well-being

Another improvement: the objective with this Green Office is to be totally in phase with the market, which means providing the people working there with unmatched comfort. "We are trying to go from a prototype to something that can be widely applied and become commonplace," says Cédric de Lestrangé, director, Group Users Department (Commercial Property Division), at Bouygues Immobilier. Unlike the building at Meudon, which has no air conditioning and is cooled naturally by vents facing a forest that open automatically

The shape and orientation of the building minimize east and west exposures

High-performance acoustic and thermal insulation of façades



during the night in summer, Green Office Rueil relies for cooling in part on a thermo-active slab system combined with individual comfort units. "Owing to thermal inertia, the concrete slab stores and then releases heat or cold," explains Alexandre Cartier, head of the technical department in the project. The multiple individual comfort units capture air directly from the façade, providing a superior alternative to the usual centralized ventilation systems in terms of energy savings and precise temperature regulation. Another major comfort factor is lighting. The office space 



Our future headquarters in Green Office Rueil-Malmaison is a key step in our "Plan for a Sustainable Way of Life." We are going to implement the installation projects gathered from the working groups and make this building a great place to work for the people who will keep Unilever France vibrant and growing for generations to come"

Bruno Witvoet, president and CEO of Unilever France



Energy consumption reduced through the thermal inertia of the building structure and the use of thermo-active slabs

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We are proud to be moving into Green Office, a building that combines accessibility, modernity, and well-being. It reflects the capacities for engineering and innovation as well as the values our staff adhere to each day, and it is totally in keeping with our company's Ambition 2020 plan”

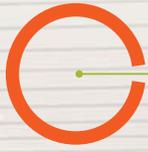
Yves Metz, president of the engineering firm Ingerop

▶ on each floor will receive plenty of natural light due to its narrow width (between 12 and 15 meters) and ample height (there are no false ceilings). The airy, spacious feeling thus created was one feature that clients found attractive and resulted in the entire building being leased six months before handover.

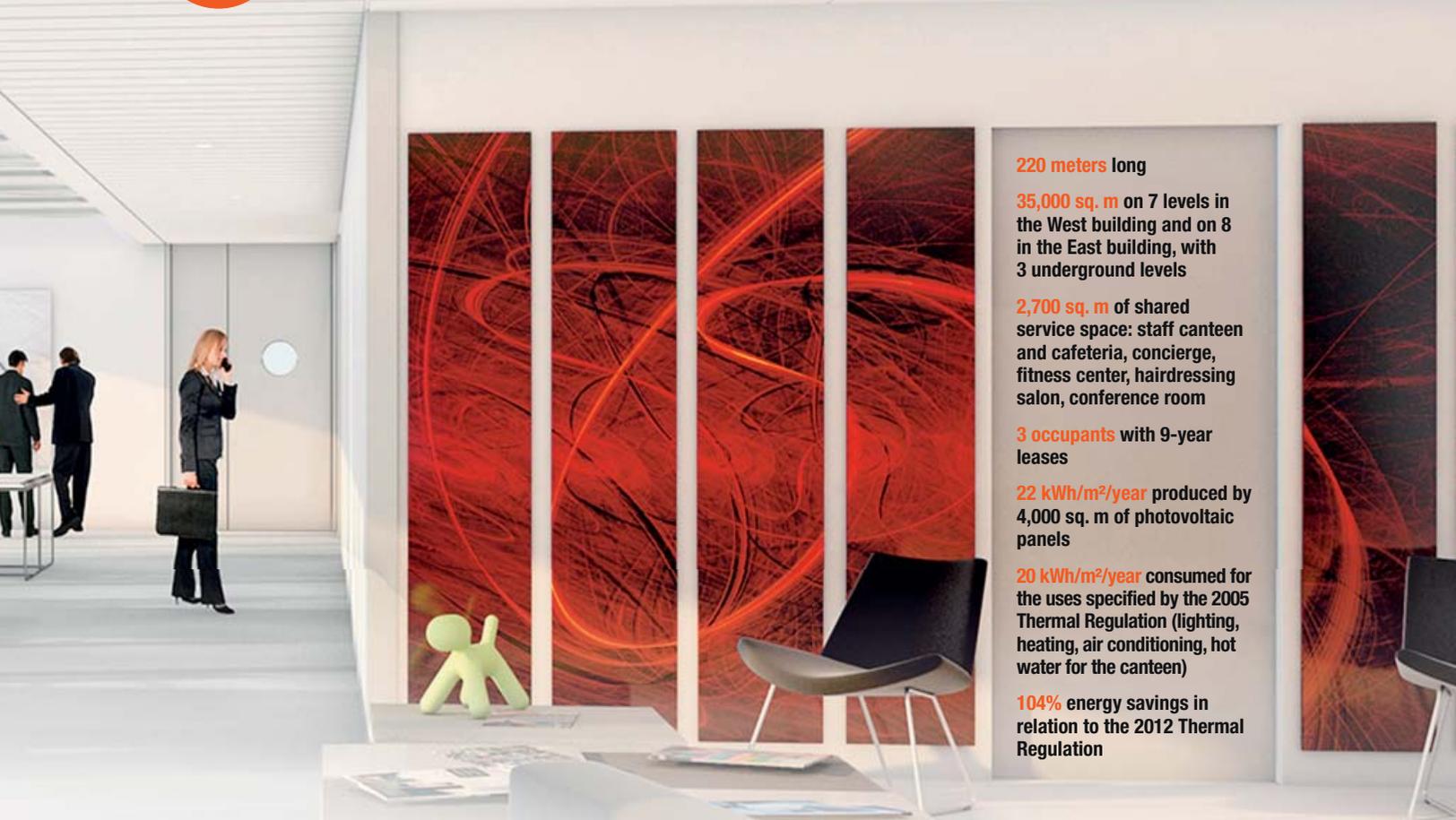
Energy mix

Each Green Office building is unique and designed to take advantage of its site and the resources available there. “Each energy mix is new,” points out Patrice Jacolot, head of Green Office Production at Bouygues Immobilier. Green Office Meudon sits on a limestone plateau, so it does not enjoy the benefit of geothermal heating (a technology

that taps the earth's thermal energy), the way Green Office Rueil does. Thanks to the proximity of the Seine, water at a temperature of 14°C will be pumped and then discharged just twenty meters beneath the building. One kilowatt-hour of energy will be consumed in pumping this water to produce 4 kilowatt-hours. The geothermal heat-pump system will cover most of the heating and cooling requirements of the building. In combination with the thermo-active slab, bioclimatic architecture, directional, silk-screened blinds and side-to-side floors, this technology will reduce energy consumption to about 20 kWh/m²/year, within the range prescribed by the Thermal Regulation. However, before energy production per



Floor plan widths optimized to favor natural light



- 220 meters** long
- 35,000 sq. m** on 7 levels in the West building and on 8 in the East building, with 3 underground levels
- 2,700 sq. m** of shared service space: staff canteen and cafeteria, concierge, fitness center, hairdressing salon, conference room
- 3 occupants** with 9-year leases
- 22 kWh/m²/year** produced by 4,000 sq. m of photovoltaic panels
- 20 kWh/m²/year** consumed for the uses specified by the 2005 Thermal Regulation (lighting, heating, air conditioning, hot water for the canteen)
- 104% energy savings** in relation to the 2012 Thermal Regulation

se, what counts for qualification as a positive-energy building is minimizing consumption. Energy consumption is also compensated at Rueil by 4,000 sq. meters of rooftop photovoltaic panels that will produce 22 kWh/m²/year. An energy performance contract with Aveltys, a Bouygues Immobilier and Schneider Electric joint venture, will guarantee the amounts the tenants will pay in operating and maintenance costs for nine years – a guarantee made possible in part by the Si@go software application for the analysis of energy performance developed by Bouygues Immobilier.

From Nanterre to Bordeaux

The Green Office brand is enjoying great success, with some ten

projects under way all across France. They include Spring at Nanterre (35,000 sq. meters), Hikari at Lyon (12,800 sq. meters), another at Châtenay-Malabry (4,000 sq. meters), as well as one in the Batignolles quarter of Paris (17,000 sq. meters), the Caisse d'Epargne headquarters at Bordeaux (8,000 sq. meters), and one at Issy-les Moulineaux (8,000 sq. meters). The next steps are to continue efforts to improve the comfort and healthful atmosphere of the buildings, while also increasing workstation density in the office spaces, in particular with innovative floor layouts. Today, the positive ideas for positive energy are at Bouygues Immobilier.



Marie-Sophie Lalo



Did you know?

Before Green Office, Bouygues Immobilier also built Unilever's current headquarters at Rueil-Malmaison 18 years ago. That project was overseen by François Bertière, today chairman and CEO of Bouygues' property development company.