Case Study

ABB‘s new headquarters in France: reconciling energy efficiency and comfort
Saving 25% in energy costs

ABB helps customers optimize energy consumption in commercial and industrial buildings worldwide. With its new headquarter building in France, ABB is utilizing its own products and solutions to voluntarily comply with ISO 5001 – a certification requiring the use of an energy management system.

Controlling and reducing energy consumption

The new ABB headquarters in France, located in Cergy Pontoise (outside Paris), was converted into an office building from a factory and is now fully equipped with advanced building automation systems including centralized monitoring. It not only brings more comfort to the building’s occupants, but also assesses the savings automatically.

Showroom for energy efficiency

To bring the Cergy site into line with safety standards while restoring the buildings, ABB took the opportunity to carry out the renovation with a building management system (BMS) and select its own low voltage products to create the most innovative energy efficiency solution. Project requirements included:

- Increase its headquarters size to 7,000 square meters (~ 75,000 square feet)
- Renovate the building management system
- Optimize facility management
- Ensure occupants’ comfort
- Control and reduce energy consumption
- Scalable spaces and respect for the environment

Selected ABB solutions

ABB has equipped the new Cergy site with solutions dedicated to energy management, lighting, heating, ventilation and air conditioning.

1. Optimizing the whole electrical system

To improve the existing electrical installation, ABB has delivered its most innovative low voltage products, such as the new main switchboard System pro *E* power (formerly Artu K), seven switchboards, all equipped with the latest PI Spring terminal blocks and Quick Safe surge arrestor, five racks, two inverters, etc. In addition, the new Emax2 circuit breaker was installed to manage the total power of the building. It manages loads of low voltage electrical installation, while connected to supervision systems. All hot/cold plants (boiler, heat pump) are controlled and driven by integrating automation cabinets AC500 controllers and the latest generation of AF contactors.

“The Emax2 already meets the tariffs going into effect in 2016 and analyzes the energy and financial performance of the building in the long term!“ said Sébastien Meunier, head of ABB Energy Efficiency in France.

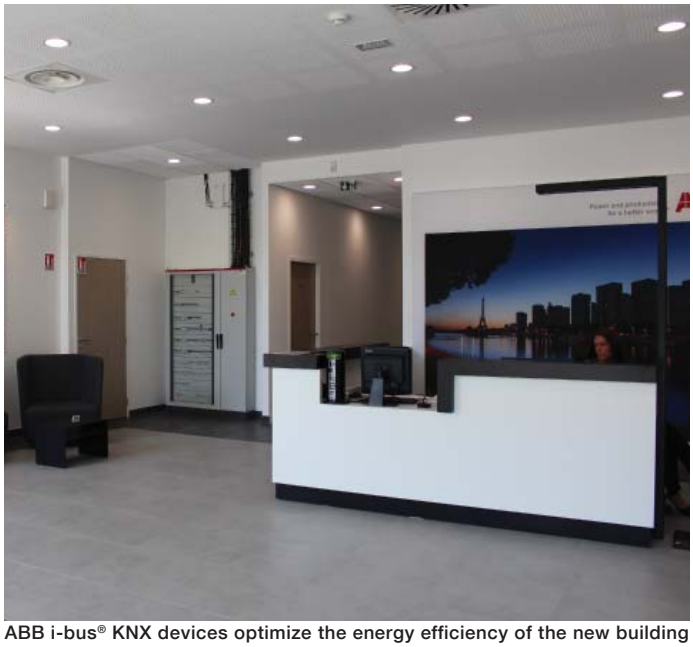

ABB i-bus® KNX devices optimize the energy efficiency of the new building and offer a pleasant working environment for employees of ABB

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2. Comfort of occupants thanks to BMS

The building is equipped with a building management system (BMS) that ensures the control of the heating, air conditioning, ventilation, blinds and lighting.

"We used the proven systems from ABB i-bus® KNX for the control and overall management of the functionality of lighting and HVAC," says Philippe Palluel, Major Projects Sales Engineer.

Temperature regulators, light sensors, presence and brightness detectors are installed throughout the building, and connected with a time management by doGate, a Newron software. They automatically adjust the lighting levels, heating, air conditioning and blinds, based on brightness, the presence of employees, opening hours and site closure. Office lighting is provided by L'Ebénoïd LED panels and controlled by KNX management. In addition, for the safety of occupants, the entire site is equipped with 170 blocks of emergency and exit lights by Kaufel, a Thomas & Betts solution, which is connected to the BMS.

3. Management of individual orders for scalable workspace

All employees are delighted with the energy savings but every employee has also an individual preference when it comes to comfort such as temperature or lighting. Not to mention that most employees feel the need to be able to influence their environment, without relying entirely on technology. This also was addressed by setting up comfort zones for individual offices, open space, and meeting rooms; by the BMS, which allows the employees to control local thermostats, lighting as well as remotely controlling these applications via a software widget. All these management functions - scalable and open BMS - are provided by automation servers doGate (Newron) which feed all data through all field protocols - KNX, BACnet, ModBus - to the site supervisor.

4. Supervision of energy consumption

To illustrate and visualize energy consumption in real time a screen is installed at the reception site, for everyone to see. A measurement data retrieval system dashboard enables the viewing, monitoring and analyzing of energy consumption of each commercial and industrial building. Since the site's opening, a 25% savings has been achieved by managing these energy costs. Further savings will be achieved after optimization of energy consumption. All main and sub meters of the buildings and additionally the network analyzis of the industrial building are provided by the latest generation of B- and C-Series energy meters (communicating ModBus and MID certification).

5. E-mobility solutions

"Eco Mobility also has its place in the new Cergy site," says Philippe Palluel. Indeed, specific parking spaces have been created for electrical vehicles powered by a Terra 53 terminal multistandard adapted to all vehicles in the market.