Project location and overview
New headquarters in Madonna dell’Olmo (CN) near Cuneo, in Italy, for NordOvest spa, a logistics and shipping company operating internationally since 1975. Inspiration for the systems was drawn from the most innovative concepts in building automation and energy efficiency. The great attention which has always been paid both towards the environment and towards employee wellbeing, recognised as the company’s real driving force, has thus been realised. Careful attention which explains the provision of relaxation areas for the employees, with a fully equipped gym, squash court and showers, particularly unusual for a medium-sized company.

Description of the work
Automation and control from a single interface
Using an intelligent system and ABB i-bus® KNX products, it has been possible to satisfy not only current requirements, but future ones too, thanks to the extremely flexible solution chosen. All systems are remotely managed with a single interface: a touchscreen control unit, positioned directly opposite the reception. This Building Automation solution allows checking the status and changing the settings of the various units of the system, facilitating global control even by non experts.

The following systems are installed:
- Main electrical system
- Lighting
- Fire detection and suppression
- Temperature regulation
- Environmental wellbeing
- Access control
- Data acquisition
- Photovoltaic energy production

The installation’s hierarchical safety system ensures maximum selectiveness, limiting and controlling the consequences of any problem.

Solutions employed
Zero-impact comfort
The aim of making the company zero-impact has been brilliantly reached. This can be seen by the lack of connections to mains gas and a large water tank in its place as a total energy reserve. This provides for hot water production for the underfloor heating, via a geothermal heat pump, and for cooling in the summer using ceiling-mounted radiator panels. Constant comfortable temperature of the environments is thus guaranteed, despite the particularly severe winters and summers in the area.
The combined presence and light detectors, which have replaced the old manual light switches, switch on the lights only when the relative area is occupied and regulate the internal lighting intensity on the basis of the external light conditions.

The PV solar array supplies approximately 200 kW of electrical energy, part of which is used internally, the rest sold back to the grid. It is installed on the warehouse roof, while the control panels, inverters and the transformer cabinet are located inside. As the roof was not at the ideal elevation for the panels, specific support structures were created for the panels in order to guarantee them maximum light exposure and thus efficiency. Finally, the bi-directional medium-voltage connection to the delivery point uses a buried cable.

**Redundancy as a guarantee for operational continuity**
The heart of a logistics and shipping company is with no doubts the server room of its IT system. Indeed a large part of their activity regards managing data and customer connections. As such, as well as hardware and software, significant investments have also been made in technological systems which are able to guarantee seamless operation. The consequences of an interruption to the power supply, however brief, would be unacceptable.

The server room has been designed specifically to guarantee seamless operation. For this reason, the project specifications considered the possibility, however remote, of damage to a PV module or string at the same time as a mains power cut. In order to ensure power-supply continuity, a complete structure was realised with redundant circuits, which the electricity-generating unit, the UPSs and the photovoltaic system are interfaced to. Automatic self-closing switches have also been used in the switchgear, precisely in order to avoid unwanted tripping caused by thunderstorms or electrical disturbances.

Operational continuity was also pursued for phone calls and data. The fibre-optic connection to the Telecom Italia exchange point is therefore backed up by a copper line connected to a second exchange, to ensure there is still a connection even if the first line goes down.

**Benefits obtained**
These are divided across various levels, all with respect for the environment and energy saving as a common thread:

- Respect for the environment: the company is zero-impact thanks to its use of renewable energy, such as water and solar lighting.
- Employee comfort and wellbeing: the energy reserve represented by the large water tank ensures comfortable temperatures throughout the year.

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