



# CHG-Meridian Reduces Energy Costs and Increases Tenant Comfort



**F**ounded in 1979, CHG-Meridian Deutsche Computer Leasing AG has grown to become one of Europe's leading independent leasing companies, specialising in Information Technology (IT) services to customers in industry, commerce, and the public sector. For their new corporate headquarters in Weingarten, southern Germany, CHG wanted a building that was just as high-tech and integrated as the leading-edge IT solutions it offers to its customers. That's why they selected a LONWORKS based solution.

The new 175,000 square foot CHG headquarters contains 110 offices on ten floors. One of the key requirements was a building automation system that could offer a high level of flexibility and user comfort for its 250 employees, and provide top energy savings. The building automation system also needed to integrate all aspects of office comfort, such as lighting, sunblinds, and temperature control, as well as crucial safety features, such as fire and smoke protection control.

## Integrated Building Automation

A LONWORKS based building management solution was implemented at the site. For the system integrator, Regulex Automation GmbH and their contractual partner, HWS Control Systems GmbH, LONWORKS represented the solution of choice to achieve

complete and seamless system integration and to meet the demands of flexibility and energy-savings required by the customer.

A LONWORKS/IP network structure was implemented throughout the building, linking together the leading control and data networking standards, using Echelon's i.LON® 1000 Internet Server. LONWORKS uses the Internet as a channel for transporting control information both locally and remotely. The entire control network offers a flat system architecture in which every data point performs control processing, thereby minimising single points of failure and providing the flexibility to adapt and extend the system simply by connecting new devices. This simple system architecture eliminates costly interface conversion. Remote system access delivers additional savings, since future changes to the system configuration, e.g., to the lighting or temperature control, can be carried out quickly and efficiently from the system integrator's own offices.

An important contribution to energy savings is the SE-B II weather station from WAREMA electronic GmbH. The SE-B II monitors outside brightness and supplies the relevant information in the form of network variables to the LONWORKS network. This information is then used to control lighting in the building zones; i.e. staircases, corridors, general hall areas, customer waiting area, and cafeteria. Lights in these areas are automatically switched ON or OFF depending on outside brightness.

## Daylight Savings

Workplace brightness is controlled by the Luxmate Daylight Computer. It has its own outside sensors and uses information about outside brightness and weather conditions to control certain nodes such as the sunblind nodes and lighting dimmer devices. By using artificial lighting as a supplement to natural daylight, significant energy savings result. On an average cloudy day, for example, the lighting can be dimmed to around 30 percent, saving 70 percent of lighting energy. Working with natural daylight and general outside conditions also increases user comfort as the workplace brightness value is continually controlled and optimised.

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User comfort is further increased by means of individual room controllers from SVEA Building Control Systems GmbH. The system integrator, Regulex, is responsible for the project-specific software on the operations panel of each controller. This software allows users to control the ambient conditions in the office rooms, such as lighting, sunblinds and temperature, according to individual preferences. In addition, monitoring and controlling the office rooms may be carried out via a standard workplace PC through the familiar environment of an Internet browser.

### Running Hot and Cold

Also integrated into the network is a HVAC system supplied by Exomatic. In the central plants, the HVAC system pulls the maximum amount of heat from discharged air back into the air supply, thus saving energy during cold periods. In the summer, central air-cooling is supported by "re-cooling", which works on the principle of evaporation. Re-cooling is used at night in order to cool the building's concrete core. The core then operates as a cold storage so that less energy is required for cooling the offices during the day. The opposite occurs in winter, when the concrete core is heated and used as a heat-storage. The control commands for starting concrete core heating and cooling are generated by the central building computer and are distributed via the LONWORKS network to each office where LONWORKS nodes open the heating and cooling valves.



The Axeda Supervisor Web-based scheduler running on the central building management and control computer provides a central scheduling system for day and week timer tasks and for public holidays. This system, together with a radio clock and timer from Systron GmbH,

further enhances energy-efficiency by adjusting for periods of non-occupancy, such as public holidays or after-work hours.

### Safety First

Safety was also high on the agenda at the new CHG headquarters. The AF24LON from Belimo Automation AG and fire protection dampers from Gebrueder Trox GmbH, are integrated across the network to provide a reliable fire and smoke protection

system. In order to guarantee its reliability, four redundant LonPoint® routers have been connected to the integrated smoke and heat vent system which is based on three types of LONMARK conforming software and consists of 60 LONWORKS nodes.

With 30 device types from 15 different manufacturers, and a total of 1700 nodes, the CHG headquarters is truly a multi-vendor installation. To highlight the achievements of this project, the system integrator for the building was presented with the "Best Multi-Vendor Installation Award" at LONWORLD® in October 2003 in Munich, Germany.

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