Süddeutscher Verlag publishing house headquarters awarded with LEED Gold
High comfort factor thanks to individual room regulation

Green buildings do not just result from stringing together a series of highly efficient products and only using sustainable building materials but rather by intelligently combining innovative structures made from recyclable materials and multi-functional building technology. One of the most up-to-date examples in the green building range is the new Süddeutscher Verlag HQ in Munich, which has been awarded with a LEED certificate in gold as first office building in Germany a few days ago. In conjunction with a multi-functional automation of the room functions, the innovative facade fulfills the requirements for minimization of the building's energy consumption. A novelty: employees can choose freely between manual and automated operation of heating, ventilation and cooling.

The principal's requirements for the new Süddeutscher Verlag headquarters (SV) on the East side of Munich remind one of the difficulty of squaring a circle. On the one hand, the building and building technology systems should be able to react flexibly to the rapid changes in the publishing and editing industry, but on the other hand a third-party usability of the building and the possible rental of individual stories had to be taken into consideration by the architects and planners. An important part of the planning was the development of an energy concept that went beyond the EnEV Energiesparverordnung (Energy Conservation Guidelines) valid at the time and met the principal's particularly high noise insulation requirements.

Along with a three-layer facade, the heart of the building and energy concept designed specifically with sustainability in mind is a geo-thermal heat pump that accesses the energetic storage potential of the earth via 36 thermally active pile foundations for heating and cooling purposes. This is complemented by the option of being able to use the building's storage capacity for night-cooling processes.

Heat is primarily sourced from internal heat loads, solar radiation and individual window ventilation and is used for room temperature control by concrete core activation. First experiences show that
the internal thermal load is sufficient to keep the building at a comfortable, individually adjustable
temperature into the winter. And what is more, all employees in individual offices can decide for
themselves whether they wish to manually control the temperature using the window ventilation
system integrated in the double facade or whether want to entrust this to the automated air-
conditioning system with closed windows. Fundamentally, room regulation functions without the
user having to do anything because the presence detectors integrated in the acoustic ceiling panel
not only (de)activate daylight-dependent lighting but also (de)activate the facade-oriented
ventilation system. The windows are also connected to the room automation system via contacts,
meaning that as soon as a window is opened, the mechanical ventilation in that room is switched
off.

Behind the scenes, a total of 1,730 Desigo ACX LON individual room regulators from Siemens
work via an individual, physically separate TCP / IP data network with the higher level Desigo
BAConet building automation system. A total of 22 Desigo PX automation stations are installed for
the connection of the two climate control units, "north" and "south", as well as the "heating", "air-
conditioning", "sanitation / sprinkler" and "underground parking exhaust air" control units.
The high synergy effects between climate-friendly construction, decentralized, demand-driven room
functions and multi-functional regulation strategies were one reason why the general planners,
CBP Consulting Engineers, Munich, suggested that the principal apply for the gold level LEED
(Leadership in Energy and Environmental Design) building certification. At the certification a few
days ago the building reached 42 points; to achieve a gold status, 39 points are necessary. The
LEED certification is a product of the U.S. Green Building Council (USGBC), an American non-
profit organization. The award acknowledges the sustainability of buildings within a rating system.

Intelligent evacuation strategies
Whilst the building automation system constantly adjusts the building technology systems to the
heating, ventilation and air-conditioning systems' demand and optimizes energetic efficiency, the
hazard management systems from Siemens are working the background. The GMA manager
Topsis is the central control and observation location via which fire alarm systems, intrusion
detection systems, video systems and alarms generated by electro-acoustic systems (ELA) can be
visualized, controlled and monitored.
A total of approx. 3,000 intelligent fire detectors and 120 aspirating smoke detectors in the double
floors and suspended ceilings provide early and safe detection of smoke and fire. An additional 350
push-button fire alarms that alarm the fire department immediately when activated by an employee
and approx. 800 control contacts for the implementation of the specified fire protection concept with
the assembly sections involved.
Whilst the approx. 2,700 loudspeakers on the corridor walls of the offices primarily inform employees in the offices of evacuation procedures and strategies at a minimum volume of 75 Decibel, special loudspeakers are installed in the foyer that can also be used as an auditorium. Evacuation instructions can still be clearly understood even in rooms with hard surfaces (glass) and high background noise due to their special directional features. In order to avoid panic reactions and unnecessary evacuations, selective alarms are only made via the ELA system in the section where a fire alarm is triggered and the floors directly below and above.

**Non-glare light for flexible desks**
The customer's high demands for room flexibility, ergonomics, energy efficiency and economic feasibility led to the installation of multifunctional suspended ceilings for lighting in the offices that combines acoustic, design and functional aspects. A suspended ceiling was developed that seamlessly integrates an acoustic function in which lighting, presence detectors and sprinklers are seamlessly integrated. The project-specific lighting is distinguished by a non-glare feature achieved using Eldacon micro-prism technology in the cover. This means that desks can be flexibly positioned in a room without creating shadows or glare. A corresponding dimmer function allows predominant use of daylight, thus saving energy.

The high energy efficiency of the lighting concept - a total of 3,000 such lights are installed - is provided primarily by the Quicktronic Dali Dim (QTi Dali) electronic control gear from Osram that also enables flexible allocation of a lighting group to a switching element. An important USP of the QTi-Dali electronic control gear is the cut-off technology that deactivates the pre-heating of the lamp filament between 100 and 80 percent luminous flux as soon as the optimum operational level of the light is reached. In comparison to conventional electronic control gear, savings of around eight percent can be made on luminous flux.

**Self-explanatory media technology**
The great flexibility of modern systems and the advantages of multi-functionality of lighting and security technology is also demonstrated by the media technology. One example is the conference area on the first floor that within a few minutes can be split up into four smaller rooms each with complete AV technology using four mobile dividing walls. The evacuation system's loudspeakers are integrated in the audio system. In the event of a fire alarm or another evacuation measure, the media system's sound is turned off so that a high-priority alarm message can be heard. All control and switching functions are configured in such a way that the control of systems is predominantly self-explanatory.
Electricity rails instead of cables
Spectacular fires like that at Düsseldorf Airport have also led to a rethink of electro-installation when evaluating the thermal load of a building. In the comprehensive consideration of economic feasibility, sustainability and thermal load, the electro-planner and general planner therefore decided to install the modularly assembled electricity rail system Sivacon 8 PS from Siemens for energy transport and energy distribution. At the same time, the electricity rail system also provides the basis for the integrated overall concept from Building Technologies. In order to prepare the high-rise for other uses, a horizontal busbar routes are installed parallel to the vertical busbar routes. Thus, if further sub-letters move in, storey-specific electricity meters can be installed, a very important aspect especially where cost saving, room flexibility and sustainability are concerned.
The low-voltage "Sivacon S8" switching system has an equally modular and space-saving assembly as the electricity power rail. The low-voltage main distribution system that comprises a total of 34 switchboards, an important component of the Siemens "Totally Integrated Power" concept, supports the system concept that ranges from the Power Management System to the low-voltage main distribution system to the power outlet.

Summary
The Süddeutscher Verlag HQ is an example of how economic feasibility, sustainability, building energy efficiency, flexibility of use and a productive working environment can be aligned with a self-definable room climate. A considerable part of the implementation of the complex building functions have systems that communicate with each other with as little interference as possible. This shows that multi-functioning systems based on only one product range with consistent system architecture are considerably more efficient and thus also more sustainable with regard to a Green Building Certification than heterogeneous solutions with various product ranges.

Picture captions
Fig. 1 (building elevation)
Architectural finesse and intelligent building technology behind the scenes distinguish the new Süddeutscher Verlag HQ in Munich, which has been awarded with LEED gold in February 2010

Fig. 2 (foyer / auditorium)
The multi-use atrium links the high-rise and low-rise buildings. All interior offices are centrally air-conditioned
Fig. 3 (offices to the atrium)
The ceiling lights that were specially developed for the SV HQ distinguish themselves with their non-glare light distribution. A dimmer function enables the primary use of daylight.

Fig. 4 (open-plan office)
Window ventilation, circulation cooling or mechanically supported fresh air shower: employees can determine room temperature themselves

All figs. GKK+Architekten

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