N° 30

SAUTER FACTS

The magazine for SAUTER customers

Modern all-round service for old masters
SAUTER in operation for state treasures in Saxony

Saving up to 30% without additional investments
Taking a look at operational energy management

The best positive-energy office building in Austria
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Environment & sustainability

Innovation

SAUTER highlights

SAUTER
Creating Sustainable Environments.

Dear Readers,

You can count on our staff's dedicated support as you pursue your energy optimisation goals worldwide. We're with you at every stage of your properties' life, providing our specialist skills in building automation and management.

I'm pleased to welcome you to the latest issue of the SAUTER customer magazine, which offers more valuable news about the energy consumption of buildings and the potential for optimisation. When planning and engineering new properties, energy-conscious building operation is one of the central challenges for investors and planners. And for existing buildings, only by optimising the building automation system can a major saving potential be exploited. Energy-conscious operation can achieve savings of 15 to 30 per cent (see page 4) – and not through additional building investments, but simply by closer monitoring and the know-how of experts.

Integrated, optimised building automation forms the central nervous system of a building. And developing clever products and intelligent, convenient software solutions for smart building automation is our passion. So we are delighted to accompany you as you upgrade the energy efficiency of your buildings. It's entirely up to you whether we do this with our new "easy room automation" (see page 8), comprising only two devices, or with the absolutely "best-in-class" room operating units (page 11). The new mobile Energy Management Solution for monitoring your properties' energy consumption, regardless of their location, (page 6) also contributes significantly to the sustainability of buildings.

We are particularly keen to ensure the safety, comfort and conformity of your buildings' operation through careful and expert maintenance of the installations. We see ourselves as life cycle specialists in the field of building management. The customer examples starting on page 12 of this issue describe how exciting projects and challenging customer goals are turned into reality.

Yours, Marc Jaquet,
President of the Board of Directors

"Savings of up to 30 per cent – without any additional investment"

Following the system vendor conference at the SAUTER head office, SAUTER Facts talked to speaker Prof. Werner Jensch about the benefits of operational energy management and untapped potential in energy and facility management. Prof. Jensch is the head of Technical Equipment & Energy Efficiency and authorised officer at ASSMANN CONSULTING + PLANNING GmbH, an internationally active consulting and planning office in the building sector.

An interview with Prof. Dr. Werner Jensch

In your presentation you pointed out that integral building automation is a challenge for the future. Where do you see the greatest difficulties?

Integral building automation is the interdisciplinary networking of all building systems, leading to the optimisation of all the functional requirements for operating a building. For me, it is a key component of the energy transition. As low-energy buildings become increasingly complex, it should enable the dynamically changing relationships – between the options for regenerative energy and the requirement for useful energy – to be harmonised as efficiently as possible. There is a risk of it becoming overly technical here. There must be greater focus on people and on the operability of the systems. The visualisation of today's building automation systems is still geared towards engineers too much, rather than towards the user.

Which solution approaches would you see as the most promising right now?

I'm happy that room automation has developed and established itself in recent years. It optimises the technical installations precisely where this is required, leading to increased comfort and energy efficiency. I'm convinced that these systems will also increasingly work their way into private residential premises. However, it must also be possible to operate the systems effortlessly. I've always wanted to have an "energy app" for buildings. The first developments are now being made here.

Efficiency goals are everywhere in integral building automation – in terms of energy and, of course, in terms of costs. How are these two goals related?

The optimisation of energy and operating costs has always been a central task in building automation. I saw it as a missed opportunity at the end of the 1990s that the building automation industry was not more active in the operation management and facility management areas. Building automation provides information about the state of all the technical systems in a building. Nevertheless, the CAFM systems (Computer-Aided Facility Management) were not developed by our industry. While they can be connected to the building automation, they are not usually an integral component. For this reason, the market potential of the actual operation of buildings was also not recognised by many building automation companies, even though this was precisely where the expertise and the infrastructure for efficient energy and facility management were to be found.

Making buildings sustainable means ...

- higher rental yield
- longer tenancies
- higher investment returns
- increased value of buildings
- reduced operating costs

Sustainable buildings are ecologically and economically better, with increased user comfort.

You mentioned the principle of operational energy optimisation. What are the goals of this optimisation, and what means are employed to achieve them?

Operational energy optimisation aims to improve the operation of existing installations. The building automation supplies it with information and, with the latest visualisation tools, permits efficient diagnosis of incorrect operating statuses, allowing the installations to be optimised. Many installations are configured during the commissioning, before they are actually used. An optimisation is seldom performed over a longer operating time. In the same way that a new pair of shoes has to be worn in, the building technology must also be adjusted to the conditions while it is being operated. In the USA, for example, they follow this aspect much more closely, and in larger building projects commissioning is a continuous process. The potential savings should not be underestimated, and have now been proven in many research projects. On average, savings of 15–30 per cent can be made – without any additional investment!

Optimisation often means the fine adjustment of the building automation after commissioning. What other areas must not be neglected either?

It is true that the operational optimisation is often seen as a labour-intensive fine adjustment of very complex control parameters. The biggest and easiest potential savings in buildings can usually be made by simply adjusting the operating times and set points to the actual requirements. The rule of thumb is that a temperature reduction of 1 kelvin leads to an energy saving of 5–10 per cent, and reducing the operating time of an installation by one third enables a saving of the same order. When operation has been adjusted to the actual requirements, you can begin exploiting the potential to be found in how the installation technology functions. This adjustment could very easily be achieved as part of the regular installation servicing, as an additional area of business. The great importance of user comfort must not be neglected in the process. However, operational optimisation is a very good tool for diagnosing the adherence to comfort criteria, and for improving operation of the installation for this purpose.

Professor Jensch, thank you for this interview.

Being efficient with even greater efficiency: many new features in SAUTER EMS 3.2

In the current version 3.2 of the leading SAUTER EMS energy management software, there are many new features that make configuring and using the software even more efficient. The intelligent new QR code function on EMS Mobile makes meter-reading rounds even easier than before.

An indispensable tool for the energy manager and the installation operator, SAUTER EMS enables close monitoring and continuous optimisation of the energy efficiency of buildings and production plants. The current version of the software provides a wide range of useful function extensions for all user groups, not least in system administration.

Expanded functions for users

Many of the new features in SAUTER EMS 3.2 were implemented based on feedback from end users. For example, the menu navigation for the modular portal views has been simplified further, therefore saving yet more time. Energy performance figures and consumption data can be navigated and presented even faster using easy-to-understand graphical elements.

The SAUTER EMS solution covers the whole range of analysis functions, from simple monitoring to formula-based evaluation of key performance indicators (KPIs). Along with the most important analysis functions of Carpet and Scatter Plot presentations, Pie Charts are also now featured.

Additionally, periods can be predefined individually for the entire portal, or defined and displayed specifically by the user. Yearly figures from the previous year are also available at the push of a button, and of course throughout the entire portal!

Because limit value violations are monitored and notified in the browser and via e-mail and SMS, users can react quickly – if necessary from any PC with Internet access, or via their smartphone or tablet. Along with the existing languages English, French, German, Italian and Czech, the user interface is now also available in Spanish.

On the move faster with QR codes

SAUTER EMS Mobile, the stand-alone energy management module for tablets and smartphones, has also come up with impressive new features. The application supports the widely used HTML5 standard, independently of the platform, and can be used in every modern mobile browser.

The new version adds an extremely useful QR code function to the metre value entry procedure. Instead of identifying a data point manually, the user captures, with the camera of the mobile device, a machine-readable code at the individual stations of a metre round. This simplifies and speeds up the process considerably. It is now also possible to define the sequence in which the application displays the data points, thus matching better the customer's metre rounds. Data points already read are indicated automatically and moved to the end of the list.

SAUTER EMS Mobile not only makes the time-consuming entry and consolidation of metre values far more efficient. The application also actively helps to avoid metre-reading errors. It compares the entered values online with the value from the last recording period and informs the user about a potential error if there is a significant deviation. If there is no Internet connection, all the entries are saved and transferred to the SAUTER EMS server at the next opportunity.

Templates enable faster start-up

SAUTER EMS now provides the opportunity to define templates for data points and groups, thus making engineering of the energy management environment more efficient. Once they have been stored in the virtual library, these templates can be imported and used for other data points and groups. This amounts to a huge time saving, especially for large projects. In addition, using templates assists when standardising an EMS installation.

The new version of SAUTER EMS allows the user to easily incorporate dynamic HTML elements, known as widgets, into the portal. For example, interactive map material, live weather data or other helpful visualisations of information can now be added to the user views.

EMS in the cloud

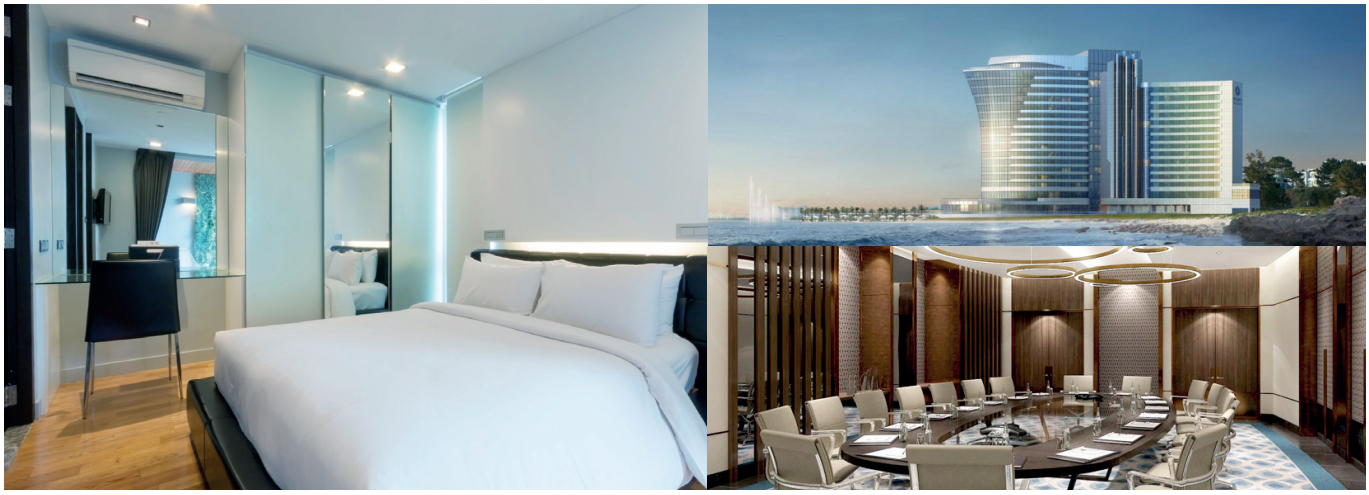
For many years, the SAUTER EMS server has also been available as a cloud solution. In this licensing form, customers do not operate the infrastructure for EMS themselves, but rent IT capacity from SAUTER for the energy management solution. Administrators and end users of the system access the platform with a secure Internet connection.

As the EMS server does not have to be installed at the customer, and they can count on the service of a reliable, secure data centre, SAUTER EMS can be started up from the cloud very quickly. There are no costs for maintaining hardware and software as all these tasks are covered by a hosting fee.

Whether on a PC or mobile device, in a dedicated data centre or in a cloud – SAUTER EMS is the ideal tool for the energy manager and installation operator to optimise the energy efficiency of buildings and production plants even more efficiently.

SAUTER ecos 3 – the easy room automation

The new EY-modulo 3 product family from SAUTER concentrates on controlling the room climate. It comprises the SAUTER ecos 3 controller and a separate room operating unit and provides all the functions for heating, cooling and ventilation in a room. SAUTER ecos 3 is therefore the simple solution for use in classrooms, hotel rooms, hospital rooms and individual offices.



With SAUTER ecos 3, simplicity is the goal. While SAUTER ecos 5 is about integrated room automation – from the optimum room climate, intelligent lighting to automatic shading – SAUTER ecos 3 is geared towards intelligent unitary control for ventilation, chilled ceilings or radiators. ecos 3 mainly covers all the solution variants for room-temperature control and activating the fans of a wide range of fan coil units. The product also provides a variety of parameterising options for even more applications.

Controller and operating unit separated

SAUTER ecos 3 relies on the tried-and-tested concept of separating the room controller and room operating unit. This separation has a number of advantages. For example, installation costs are reduced and the wiring is simpler. The controller can also be fitted directly on the system – e.g. on the fan coil unit – and provide autonomous room controlling without local room operation.

Easy operation, cost-effective design, high level of user-friendliness

The controller features a compact, cost-effective design, while the room operating unit is very user-friendly due to its simple design and large display. The four multi-functional buttons of the room operating unit can be used to select functions and information easily and enter individual settings. In this way you can select presence/absence, the room temperature and fan speed. A built-in temperature sensor measures the current room temperature and displays it on an easy-to-read LCD with blue illumination, which switches off again after a specific period to save energy.

BACnet everywhere

True to the principle "BACnet everywhere", the EY-modulo 3 product family is an addition to the basic segment of the SAUTER portfolio. The controller uses the BACnet MS/TP protocol – a simple bus

First references with SAUTER ecos 3

- HYATT Hotel in Istanbul: 160 SAUTER ecos301 controllers and ecoUnit382 room operating units for the hotel rooms and apartments. With integration of the room automation into the SAUTER novaPro Open building management system and the SAUTER moduWeb Vision visualisation solution.
- Outpatient clinic in Sorgues near Marseille: 27 SAUTER ecos301 and 24 SAUTER ecoUnit382 for individual room climate regulation of the 27 fan coil units from Carrier. The open rooms are each operated with two SAUTER ecos301 in the master-slave mode. The primary air-handling unit system is operated with a SAUTER modu721 communication module and a SAUTER modu525 automation station. Here the ecos 3 room control is visualised on the integrated SAUTER moduWeb web server.
- In its first big project, ecos 3 is being used in a new hospital in the north of Spain with 2000 rooms and which is set for inauguration in 2015.

variant of the widely used BACnet standard. With this open protocol, SAUTER ecos 3 can be incorporated into a BACnet internetwork without problem as an application-specific controller (B-ASC), using conventional BACnet routers. It is therefore also very easy to integrate into a system with SAUTER EY-modulo 5.

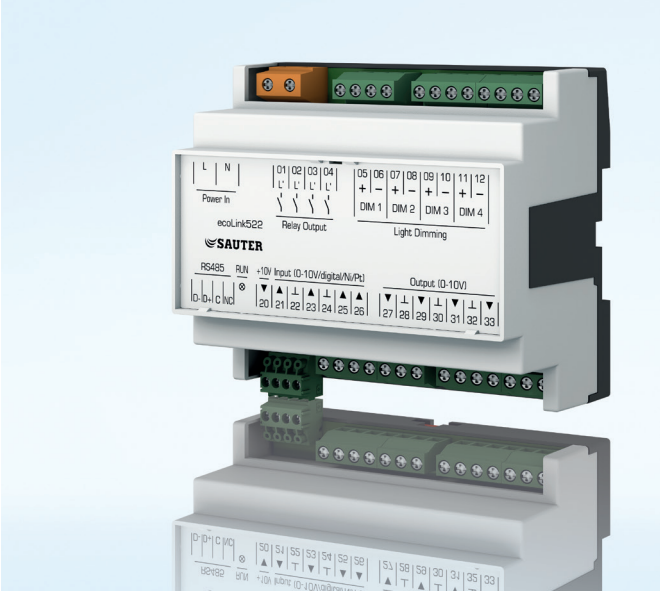
Flexible adjustment for versatility

The SAUTER ecos 3 controller can be freely parameterised and supports numerous applications. It has all the required hardware inputs and outputs for fan coil units, heating panels, radiators, chilled beams and chilled ceilings. The controller uses BACnet MS/TP to communicate seamlessly with BACnet/IP components for integral building automation. Enabling other applications, such as lighting and window blinds, to also be incorporated into the network if required. All the functions and parameters can be selected and changed using the room operating unit. In addition, the controller's parameters can be loaded easily using the "EasySet" PC tool. A plug-in memory card can also be used to copy configuration parameters from one controller to the next. SAUTER Academy offers training courses in utilising, parameterising and integrating the new SAUTER ecos 3 product family.

SAUTER ecos 3 is the ideal solution for easy room automation projects. The package with a controller and room operating unit provides increased planning security and reliable functionality.

SAUTER ecoLink522 and ecoLink523 – ideal solutions for flexible room automation

There are new additions to the SAUTER ecoLink product family. Owing to their module technology, ecoLink modules with the SAUTER ecos500 are suitable for use in integrated room automation. And with the SAUTER modu521, for many standard tasks in building automation. Now, two new modules offering great value for money – the ecoLink522 and ecoLink523 – are being added to the very successful product family.



The new SAUTER ecoLink522 and ecoLink523 are used in integrated room automation. They monitor and optimise the room climate, lighting and sunshade in functional buildings such as offices or administrations. Their module technology and remote fitting in the room significantly reduce the wiring costs for the modules. This helps save resources, reduces the fire load and enables cost savings. The universal inputs and large number of analogue outputs, combined with outputs for dimmable lamps, provide increased flexibility and excellent performance in a small space.

More flexibility, lower costs

Like all decentralised ecoLink I/O modules from SAUTER, the SAUTER ecoLink522 and ecoLink523 are also extremely flexible. The room division and operation of building areas can therefore be optimised independently of each other and adjusted to changing requirements.

In the process, a building area is treated as an "open space" and divided into what are known as segments – the smallest grid for a division into rooms. At the same time, these segments represent the smallest functional unit with regard to the room automation. The SAUTER ecoLink modules connect the sensors and actuators in the room segments to the ecos500 room automation station, independently of the actual room assignment of the segments. Consequently, rooms can now be formed extremely variably by simply grouping the room segments. This enables building operators, on the one hand, to offer the building users greater flexibility, while on the other, they can significantly reduce conversion costs and periods without tenants.

SAUTER ecoLink522: all in one

SAUTER ecoLink522 is ideal for controlling a complete room segment with up to four sensors, constant valves for heating and cooling, two dimmable lamps and an external venetian blind for the sunshading.

SAUTER ecoLink523: the economical extension

SAUTER ecoLink523 is an extension of the SAUTER ecos500 room automation system. Its additional analogue outputs are used to control EC fans, constant valves and dimmable lamps.

Both modules meet the increasing demand for analogue output signals, e.g. for fan coil units with EC motors and constant AXS valves. Additionally, because they have very high packing density, many devices can be connected and controlled within a very small space.

Green and wireless: reliable room operation with SAUTER ecoUnit 1

The second generation of the battery-free SAUTER ecoUnit 1 wireless room operating unit combines improved functionality and an attractive design with the highest level of availability and reliability.

True to the motto 'using available resources optimally', SAUTER has further developed the EnOcean ecoUnit 1 wireless room operating unit. With even more efficient energy harvesting, it uses the light energy in the surroundings to reliably monitor and control the comfort and energy consumption of rooms.

Optimised availability and reliability

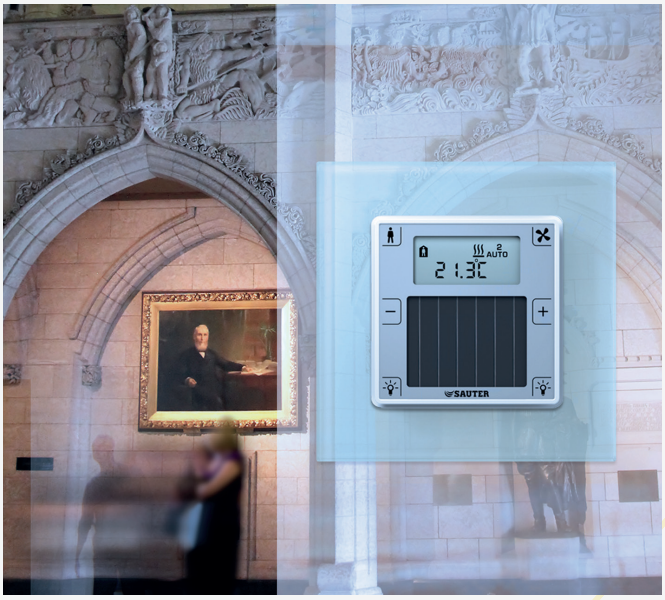
The solar cell of the new device generation is larger and positioned closer to the front of the device – best possible use can be made of the available room light and shadowing effects are reduced. The new SAUTER ecoUnit 1 basic unit only requires a minimum lighting level of 250 lx for five hours on five days of the week in order to operate reliably. In combination with the enhancement module, it can even be used at a level of only 125 lx. By way of comparison, at a typical workplace, the lighting level during a working day of eight hours is approx. 500 lx. The average basic lighting in functional buildings is around 300 lx.

Additionally, a large buffer store and the new Low Power mode provide a sufficient operating reserve to ensure energy-efficient operation of a room for up to 120 hours even during longer periods of darkness, e.g. over long weekends. When it is dark, full operation of the SAUTER ecoUnit 1 is still available continuously for 60 hours. The basic functions are active in Low Power mode for a further 60 hours. The button functions are then usable without limitations, although the temperature measurements are then performed at slightly longer intervals.

Ideal form factor for increased efficiency and aesthetics

The wireless room operating units from SAUTER increase the operating comfort and the room comfort at the same time. To this end, the display of the SAUTER ecoUnit 1 family was re-positioned so that it is much easier to read the important status information on the room conditions at various lighting levels.

The SAUTER ecoUnit 1 wireless room operating units are part of the SAUTER EY-modulo 5 product family. They record the room temperature precisely, and their buttons can be used for individual set point correction and to select the occupancy mode and fan speed.



Thus the units control the climate, as well as equipment systems for lighting, window blinds or windows, in order to optimise the energy in the room.

SAUTER ecoUnit 1 communicates wirelessly with room automation stations via the EnOcean interface, for example with SAUTER ecos 5. The room automation station can use the bidirectional function to influence the content of the display on the room operating units.

SAUTER ecoUnit 1 is available with a wide range of functions, designs and colours. With its high-quality appearance, this smart device looks good in any surroundings, making the room users feel comfortable in every possible way.

An energy-efficient future for Dresden's old masters

Reliable technology and all-round service from SAUTER help the custodians of state treasures in Saxony to keep the works of Raphael, Rubens and Rembrandt in an optimum room climate – throughout night and day and with a high level of energy efficiency.

The 14 museums of the State Art Collections of Dresden (SKD) are among the most important in the world. The collection enchants its visitors with an incomparable variety of paintings and objects, including masterpieces such as Raphael's "Sistine Madonna", sculptures from five millennia and treasures made of precious metals and porcelain.

The buildings that house these rich chambers in the heart of the city are also fascinating witnesses to history – the world-famous Zwinger is one of the greatest examples of baroque architecture, and the Residential Castle is a must for every visitor to the city.

The high art of operating a building

The large number of visitors and demanding requirements for protecting the exhibits are an extraordinary challenge for the operation of the premises. In the past, the ambient conditions were recorded by making rounds through the buildings. However, the complex control operations required for flawless and energy-efficient building operation need an advanced solution.

Many of the art objects are made of materials that react to fluctuating temperatures and humidity. In the worst case, this process can damage the exhibits. Annual visitors of over two and a half million therefore also pose a challenge – because every person contributes approx. 70 W of "heating output" and 60 g of water vapour per hour to the room climate.

Efficient management using a networked infrastructure

In the course of refurbishing the collection's premises it was therefore decided to install building automation with a central management system. The goal was not only to manage the museum building more precisely and efficiently, but also to make this process more user-friendly. Following a careful selection process, the body in charge – the Dresden I branch of state-run real estate and construction management for Saxony (Staatsbetrieb Sächsisches Immobilien- und Baumanagement, Niederlassung Dresden I) – decided on SAUTER technology and services for the building automation. At present, the SAUTER novaPro Web modular SCADA system monitors and controls all the installation sections, enabling the technical service department to manage energy efficiently.

A major goal was to use the new management software to provide a wide range of user groups with transparent information about the status of installations and climate parameters. The solution from SAUTER offers simple and fast image navigation through the installation arrangement and automatically supplies status information in dynamic views and trend curves. The monitored units are thus easier to optimise and maintain.

When the building automation system was last migrated, the aim was to use network technologies consistently. Display cases have been equipped with their own sensors and climate control, and integrated into the overall automation system via a LON interface. The beauty of this solution is that exhibition rooms can be arranged flexibly.

Service around the clock

Because the premises and works of art have such historical significance, it is important for this customer to know that they have a reliable service partner providing technical assistance at their side. SAUTER has supported the SKD since 2002 in the maintenance and ongoing planning and renovation work with a service package covering the installations' entire life cycle.

SAUTER specialists carry out the complete maintenance and perform half-yearly sensor maintenance on the components in the exhibition rooms and display cases which preserve the irreplaceable artworks of the SKD. Very fast response times, with technicians on call round the clock, ensure that the local experts can intervene rapidly in the case of a serious incident.

SAUTER is also responsible for maintaining the hardware and software in the building automation centre, continuously keeping it up to date. Thanks to a guaranteed stock of spare parts, repairs can be performed quickly – as is absolutely necessary for certain special sensors. Local SAUTER service experts see to it that all components are operating correctly and help prevent breakdowns. They carry out all necessary software modifications and control parameter adjustments on a timely basis, resulting in the most energy-efficient operation possible.

"To preserve these art treasures we have to guarantee that our technical installations are operating economically and reliably at all times."
Ludwig Coulin, Manager, Dresden I branch of state-run real estate and construction management for Saxony

bpk | Staatliche Kunstsammlungen Dresden | David Brandt

bpk | Staatliche Kunstsammlungen Dresden | Elke Estel | Hans-Peter Klut

bpk | Staatliche Kunstsammlungen Dresden | Hans Christian Krass

bpk | Staatliche Kunstsammlungen Dresden | David Brandt

Green Building instead of printer's ink

This new office and commercial building in the middle of Prague aims to be more than "just" a building. A progressive design and modern building technology help conserve resources, while the premises infuses new energy into the surrounding area.

Every year, Prague attracts millions of tourists with its wonderful baroque and gothic buildings. The more recent architecture in the "Golden City" can also comfortably hold its own with other cities.

The largest office space in the country built in one phase

The "Florentinum" complex, opened at the end of 2013, also gives the cityscape a progressive touch. The architect of this project had the rare opportunity to create new public spaces in the middle of Prague and to integrate them into a modern premises. On the former site of the publisher of a communist newspaper and printer of political papers, an exceptional, energy-efficient office and commercial building was to represent the new era: from printer's ink to Green Building.

The central-European investment company Penta spent around 160 million euros to turn their vision of an optimum office and commercial complex into reality. The result elegantly combines offices and shops with a generous inner courtyard and garden. With a gross area of 49,000 m^2, the complex is currently the largest project of this kind in the Czech Republic – constructed and completed in one phase. There is an additional 7500 m^2 of commercial space, with a supermarket, restaurants and showrooms, as well as a 5000 m^2 public area.

Efficiency, comfort and flexibility

The quality of the project is even more impressive than its dimensions. All nine storeys of offices are built to the highest standards in terms of functionality, efficiency and comfort. It was particularly important to planners that tenants with individual requirements had the widest range of adjustment options, enabling flexible utilisation and subdivision.

Penta's view is that a qualitatively good working environment is important for the perceived quality of life and the creativity and productivity of the users. Therefore, from the outset the company's goal was to get the low-energy building certified as a Green Building – while also expecting this design to lower the operating costs. Due to its efficient building technology and the materials used, the project already received the LEED Gold preliminary certificate in September 2011.

High-quality building technology from SAUTER

Using the central air conditioning unit, the building automation system, with hardware and software from the SAUTER EY-modulo 5 family of systems, supplies every permanent workplace with 50 m^3 of fresh air per hour. The room temperature is regulated as required using chilled ceilings and heating floor convectors. The 800 window blinds on the 19 differently aligned facades of the Florentinum are integrated into the building automation to optimise the energy efficiency. On the building management level, four different systems with SAUTER novaPro Open are used: one for the basic HVAC equipment, a second for the room automation, a third

in Prague

for the overview of the energy and media consumption and the lighting (DALI), and finally a fourth for the facility management. A sophisticated navigation system is used for intuitive operation via a browser, with every room displayed in the software with its own suitable visualisation.

The management system uses the integrated BACnet/IP driver to communicate with the 90 modular SAUTER modu525 automation stations in the building. These were programmed by means of the SAUTER CASE Suite engineering software. A solution for controlling the temperature, lighting and window blinds was preprogrammed for every room type, enabling efficient engineering and planning security as it was based on tried and tested parameters.

BACnet/IP, DALI, Modbus, M-Bus? No problem

At present, 290 SAUTER ecos500 room automation stations are responsible for energy-optimised room control (with extensions also planned), each serving up to four rooms or room segments. Individually selectable comfort and occupancy period profiles and manual options provide the room users with a pleasant working environment and help save energy when rooms are unoccupied.

BACnet/DALI controllers integrate over 10,000 LED lamps into the building automation system. Numerous additional installations are also incorporated into the overall system via Modbus. This allows the operators to continuously monitor components such as boilers and burners, cooling equipment, the weather station or the emergency power unit on the management level. All the important energy consumption points (over 1,200) are monitored, and they are integrated into the management level via an M-Bus data line (electricity, water, heating, cooling and gas).

More efficiency, more value

The Florentinum was not merely intended to provide additional commercial space, but to be an enrichment – with more comfort, more functionality and more efficiency. The LEED Gold certificate and the first prize in the national "Best of Realty" competition, which was awarded to the premises, have verified that the project not only aspired to these lofty goals, but has implemented them convincingly. On 30 June 2014, the building was awarded the LEED Platinum certificate.

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SAUTER ensures smooth operation of the ratiopharm arena

The ratiopharm arena in Ulm/Neu-Ulm is one of the most modern event locations in the south of Germany. The home venue of the ratiopharm ulm Bundesliga basketball team caters to up to 9000 people, and with its multi-functional interior space concept provides the perfect stage for sporting events, concerts and cultural and business occasions. Since the arena was opened in December 2011, SAUTER has been responsible for the facility management.

The ratiopharm arena was built under contract from the two cities of Ulm and Neu-Ulm, with the Max Bögl Group in charge of the overall building management. Within a period of only 19 months. The building – 80 m wide, 90 m long and 14 m high – has a usable event area of around 2000 m^2. As the main sporting user of the arena, the ratiopharm ulm team has at least 17 home games there per season in front of nearly 6000 spectators.

The new building is distinguished by its large glass facade and offers a wonderful view of Ulm Minster, with its famous church tower, the highest in the world. The investment of around 27.5 million euros was financed jointly by the cities of Ulm and Neu-Ulm as owners of the ratiopharm arena. Max Bögl is the operator of the arena and has the responsibility for maintaining and marketing the building.

SAUTER on board since the opening

Under contract from the Max Bögl Group, SAUTER has been responsible for the facility management of the ratiopharm arena since November 2011. The services provided by SAUTER for the premises include, in particular, the technical building management, maintaining, inspecting and servicing the building, and monitoring warranties. They also cover fire protection and safety technology, plus the necessary fire protection training. And finally, event co-ordination and providing support for setting up and organising events.

The contract was awarded to SAUTER due to its extensive know-how in the technical building management sector, as well as its proven experience in other, similar projects. The customer, Max Bögl, was also impressed that SAUTER is not only technically competent as a company, but also in terms of the staff it has working on site. This assures the customer that its goals for the facility management can be fulfilled – namely sustainable management of the building – while expert, well-trained and experienced staff also provide optimum technical management.

Successful operation guaranteed through high availability

The employees are indeed an important success factor for smooth operation of the ratiopharm arena. Because the arena accommodates, in tightly scheduled succession, many events of very differing styles and all with varying requirements, it continuously needs adequate staffing for the facility management. This necessitates high availability more or less around the clock – a challenge that SAUTER can master owing to its extensive experience and intelligent planning.

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The ratiopharm arena

With its capacity of up to 9000 people, the ratiopharm arena is the event location in the Ulm/Neu-Ulm conurbation. Its appearance is distinguished by the large glass facade – creating a foyer bathed in light and luminous VIP area. With its multi-functional interior space concept, this most modern arena in southern Germany is the ideal venue for top events of all kinds.

The Max Bögl Group

With its headquarters in Neumarkt, Germany, the Max Bögl Group was founded in 1929. An annual turnover of over 1.5 billion euros and around 6000 highly qualified employees worldwide make Max Bögl one of the top 5 German building firms. And today, run by the third generation of the family, it is the largest building firm in Germany in private ownership. Max Bögl was responsible for building the ratiopharm arena, and has undertaken to operate it for the next 20 years. Arena Ulm/Neu-Ulm Betriebsgesellschaft mbH is the subsidiary of the Group that markets the ratiopharm arena, acting in this capacity mainly as the lessor and service provider for potential event organisers and sponsors.

Sustainability in Paris on the rise

The conversion of a Haussmann building, constructed in the first half of the twentieth century, at 24, rue de Prony is turning it into a low-energy building of exemplary character. Together with its intelligent automation system, the building and energy management solution from SAUTER allows resources to be used efficiently and provides a high level of room comfort.

Founded in 2008, Covéa Immobilier combines the means and expertise of three of the biggest companies in real estate management – MAAF, GMF and MMA. Covéa Immobilier has resolved to improve the ecological footprint of its real estate portfolio and get behind challenging projects, thereby lowering the energy consumption of their buildings. A suitable opportunity presented itself recently in the form of an office building in the 17th arrondissement of Paris.

A strategic reference

The "24 Prony" Haussmann building, not far from the centre of the French capital, was constructed in 1930. It covers an area of 4100 m² over ten storeys. The building was behind the times regarding certain criteria, such as energy consumption and accessibility for people with limited mobility.

Covéa Immobilier, which manages the building for SCI Prony Bureaux, saw these very shortcomings as a good opportunity for a complete conversion. The goal of those responsible for the project was to convert the property into a Green Building fulfilling the highest standards. The planners were successful: a "very good" BREEAM certification and also "very good" for the national quality labels BBC (low-energy building) and HQE (high environmental quality) not only make this property an excellent reference object for its owners, but also contribute to the Group's ecological focus.

At the same time, the outward appearance of the building was barely altered by this conversion as the most radical changes were made "behind the facade". For example, the entire automation system of the building was replaced. Along with the building and energy management software, the solution employs many devices from the EY-modulo 5 system family from SAUTER. The technical devices and installations communicate with the building management software and automation system using the BACnet/IP standard protocol.

"Rejuvenation" on all levels

A key advantage of the SAUTER solution is that it increases energy efficiency while reducing the emission of greenhouse gases. At the same time, the power consumption of the automation system remains at a minimum due to the small number of automation stations.

The SAUTER EMS solution visualises all the individual energy consumption data and provides important information, allowing the energy efficiency and operating costs of the building to be optimised. To control the installation and set the parameters, the building managers use the SAUTER novaPro building management software which processes more than 4000 data points. This first-class solution enables the user to manage rooms flexibly by means of the master-slave function. New parameters can be set easily and intuitively. In this way, every room can be adjusted according to the needs of every tenant.

The automation level has eleven modular SAUTER automation stations of the modu525 type. Together with the SAUTER ecos500 room automation stations, they provide optimum control of the climate comfort in the various rooms. Furthermore, 150 SAUTER ecoLink extension modules allow the temperature to be monitored

and lighting and window blinds to be operated as needed. The SAUTER package also includes CO_2 measuring sensors. The sensors measure the air quality in conference rooms while, at the same time, using an acceptable amount of energy for supplying fresh air. They provide demand-led ventilation, thereby ensuring optimum quality of the room air. Each device is integrated into the building management system via Ethernet. Devices such as the energy metres and heat pumps communicate via the Modbus/RTU protocol.

Besides these impressive technical innovations, converting various areas inside the building, as well as its rear facade, means that it now fulfils the latest building requirements. Even if the change is not visible to passers-by – they still see a classic Haussmann building – the aim of this project was to turn this property into a showcase premises for modernisation and one of the greenest Haussmann buildings in Paris.

BREEAM® HQE ASSOCIATION RECONNUE D'UTILITÉ PUBLIQUE

Thanks to SAUTER, the "TU Univercity 2015" in Vienna is taking shape

With more than 27,000 students and around 4500 staff members, the Vienna University of Technology is Austria's largest research and education institution in the scientific and technical sector. In line with the project motto "We're shaping the future of technology", SAUTER has been helping TU Vienna with a major refurbishment undertaking. The goal of the refurbishment is to make room use at the TU more efficient and increase energy efficiency, thus improving the general conditions for research, teaching and administration.

"Technology for people": This is the mission of TU Vienna. Following this guiding principle, it has also initiated the "TU Univercity 2015" project, entailing extensive optimisation in the energy efficiency and room usage areas.

With its many years of experience and high level of expertise in building management and energy efficiency, SAUTER was commissioned by the Federal Real Estate body and provided major support to TU Vienna in this ambitious project – both with consulting services and putting various measures into practice.

Energy savings of up to 90 per cent

An important part of the project was the conversion and rebuilding of existing campus buildings in the Getreidemarkt area, beginning in 2007. The "Bauteil BA" office building – formerly the "Chemistry Tower" – also benefited from a refurbishment. Here SAUTER was responsible for the energy-optimised system, and in particular the entire intelligent unitary control, for which SAUTER used its ecos 5 room controllers. The overall functional triangle of the integrated room automation, comprising room climate, lighting and sunshading, was designed to be extremely energy-efficient. As a result, the annual energy balance is very positive; the building harnesses more energy than would have to be supplied from the outside in the form of various energy sources. The building will soon be finished and ready to be occupied. This refurbishment has made it Austria's highest positive-energy office building. It also contains the largest photovoltaic system integrated into a facade in the country. This can cover all the power consumed by the entire technical building equipment. With the energy modifications named above, and thanks to SAUTER's know-how, it was possible to make energy savings of up to 90 per cent compared with properties similar to "Bauteil BA".

SAUTER ensures good-quality air – even in rooms with complex requirements

For a number of buildings and rooms, complex requirements had to be considered, as in the Faculty for Technical Chemistry. For example, to protect the students and teachers, there are strict specifications for regulating the air balance and controlling the extractors and fume cupboards in the laboratories. Owing to its state-of-the-art control technology, SAUTER was able to fulfil these specifications: SAUTER control and monitoring systems allow fume cupboards to be operated to the highest safety standards. As the only fume-cupboard controller worldwide, the SAUTER system fulfils the certification based on EN 14175-6 and BACnet (B-BC). In specific terms, 130 modu525 BACnet/IP automation units and 400 ecos502 room controllers with BACnet/IP communication were used in the Chemistry Faculty of TU Vienna. Using BACnet/IP to integrate the fume-cupboard controller directly into the building automation system, significant cost savings were made for the installation and services, and for the co-ordination of interfaces.

The "TU Univercity 2015" project

TU Vienna has almost 9000 rooms with a gross area of over 276,000 square metres. The "TU Univercity 2015" project grew out of the decision to keep the university in the city centre. TU Vienna wants to develop into a modern city campus at its historical location before its bicentenary in 2015. This major building project will also improve the quality of the conditions for research and teaching. The space available is being expanded and adjusted to the latest requirements. The university faculties will be concentrated at four locations in the 4th and 6th districts and at the "Science Center" laboratories.

The SAUTER solution for TU Vienna

- Excellent energy balance: Energy-plus building with the largest photovoltaic system integrated into a facade in the country
- Versatile room automation and intelligent room management: All-round comfort with highest safety level
- Extensive networking and control: 35,000 data points incl. energy monitoring

Thousands of data points throughout the campus

The big "TU Univercity 2015" project is rounded off by energy monitoring initiated jointly by SAUTER and TU Vienna. Around 35,000 data points will be consolidated on the campus for this by the end of 2014, supplying, among other things, precise values for the air balance and the room climate. It will ensure an optimum room climate at all times and the best possible energy efficiency in the building.

Support from SAUTER has therefore led to an inviting and sustainable university campus in the heart of Vienna.

Integral room automation for private bank in Zurich

In the modern headquarters of an international private bank in Zurich, a SAUTER automation solution is providing a demand-led, energy-efficient climate. The system utilises the advantages of BACnet in data transmission and enables integral management of all the connected subsystems.

The Leumi Private Bank was founded in 1953 in a one-room apartment in Zurich. From these modest beginnings, a flourishing private bank with 180 employees has grown. The company belongs to the international Leumi Group, serving its customers via branches in 15 countries.

From a single room to six storeys

The headquarters of the Leumi Private Bank are situated in the heart of the Zurich Financial Centre – and of course they bear no resemblance to the very modest head office of its founding period. The institute now runs its business from a new, state-of-the-art office building completed in 2010.

Its staff work on six storeys in many single-room offices, open-plan offices, conference rooms and other spaces. A SAUTER EY-modulo 5 automation solution ensures that the air conditioning for the workplaces is always needs-driven and energy-efficient.

Crosscommunication between the storeys

The integral room automation monitors, controls and optimises the lighting, blinds, heating, cooling and air supply in the building. One distinctive feature of the system is that, for structural engineering reasons, the control valves for the heated/chilled ceilings in a room are each connected to the controller on the adjacent storey. In contrast, the operating units and humidity sensors in a room are connected to an automation station on "their" storey.

Therefore, the signals to the regulating valves must be transmitted from the relevant room controller to the controller in the room. The event-oriented communication supported by BACnet/IP makes this possible. In this way, signals are sent to the correct receiver without the need for a central facility, such as a building management system. Another great advantage of this is that it can be performed without putting an excess load on the data bus.

Integral room automation

In this challenging environment, the SAUTER ecos502 controllers are proving how powerful they are. As room automation stations for up to two rooms or functional axes, they control the temperature, lighting and window blinds and ensure optimum energy consumption. They record the room humidity, operate the actuators for the window blinds and control, zone by zone, the valves for the demand-led cooling and heating of the office below. The SAUTER ecoUnit 3 room operating units allow the bank staff and building operators to adjust the room climate individually.

Nor is integration of various types of window blinds into the system run-of-the-mill. On the courtyard side of the building, the automation stations control integrated slat blinds, while on the street side there are external blinds. All the lights in the offices and other common rooms are also regulated by the SAUTER room controllers.

SAUTER modular automation stations (type modu525) are fitted in the individual storey distributors. These stations, for example, monitor and control the energy-efficient operation of the air-conditioning subsystems, which are responsible for supplying air to the individual storeys and rooms. The gas boiler and the systems for generating cooling are also connected.

Central building management

The SAUTER novaPro building management system connects the subsystems to a main integrated system. Thus, the building operators can use a central management solution to monitor and operate all the connected equipment systems and components. This can be accessed easily via a browser on a PC.

A weather station supplies the system with meteorological data for optimising the energy efficiency. Any alarms indicating unexpected events would be triggered immediately by the software via SMS, fax or e-mail. System managers can therefore always be sure that the climate in every individual space is being optimised – even though the headquarters of the Leumi Private Bank now contain many more than just a single room.


HOFGARTEN
SOLINGEN
T.K.maxx
RESTAURANT
YELLOW RIVER
EDEKA


HOFGARTEN


HUSSEL

A modern shopping world with lots of daylight

In record-breaking time – from June 2012 to October 2013 – a new, attractive shopping centre was built under the direction of Sonae Sierra and MAB Development in Solingen, Germany. During the building of Hofgarten Solingen, SAUTER's excellent performance impressed everyone involved. It was a significant factor in the building's rapid completion.

Since October 2013, Solingen has been enjoying the benefits of a new shopping world in the middle of the town. Hofgarten Solingen, right on Graf-Wilhelm-Platz, offers its customers 86 stores, including major fashion labels, shoe shops, toys, culinary delicacies, gifts, electronic goods and much more. However, it's not only the shops themselves that have gone down a storm with the public. The modern architecture and impressive design in the shape of a complex polygon has been inspired by the themes of nature, industry and fashion, and provides a lot of daylight.

Backing ecology

Hofgarten Solingen's central location makes it not only very convenient to access by car, but also by bus and train, or on a bike or on foot. The shopping centre's operating company, Sonae Sierra, is particularly focussed on environmental factors and sees sustainable activity as a part of its corporate responsibility. Which is why it has its buildings certified according to internationally recognised standards. For example, the building management of Hofgarten Solingen has been certified as per ISO 14001 for its modern environmental management system.

To design the building sustainably, care was taken during the building phase to use environmentally-friendly materials and deploy energy and resources sparingly. The latter applies even more so now, with the shopping centre in operation. The architects of Hofgarten, HPP Architects, also see sustainability as the foundation of the value of a property and its development, in order to keep the construction and maintenance costs of the building to a minimum.

Efficiently integrated

SAUTER also makes a major contribution to improving environmental protection during operation of the shopping centre. The stringent requirements for the building technology demand a suitably powerful solution. SAUTER's solution is based on the novaPro Open building management system with a total of 10,500 data points. The technology for heating, cooling and ventilation has been integrated into the building automation using BACnet. For two shops in Hofgarten – H&M and Edeka – SAUTER was able to set up additional operating points for novaPro Open.

To record and consolidate the energy consumption, around 400 counters were integrated into the building automation and are operated via M-Bus. A Modbus interface connects the chiller to the master-slave process.

Autonomous controls operate the ventilation equipment. It is integrated in the novaPro Open building automation system using the BACnet protocol and with an installation identification system conceived by SAUTER.

Hofgarten, right in the middle of Solingen's town centre, not only has nature in its name – it really is a "green" shopping centre. This makes it an attractive shopping and business location for its tenants and its many visitors.

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