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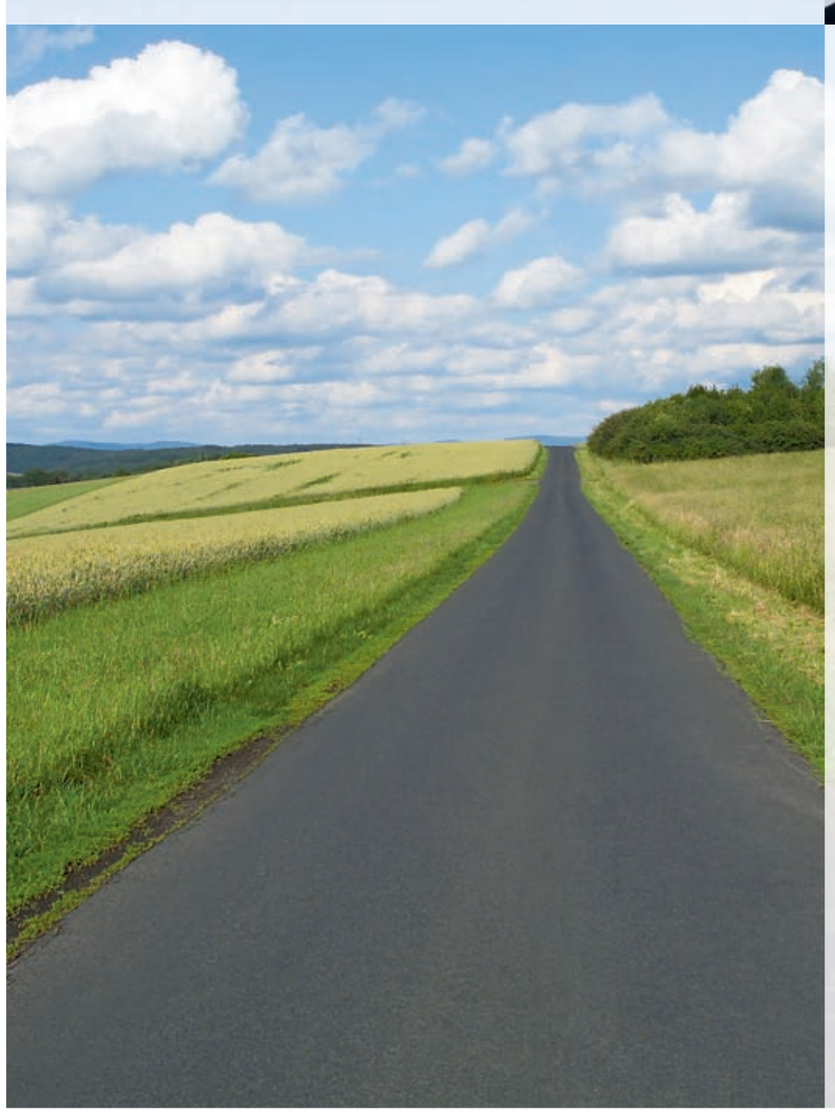
Our solutions boost energy efficiency and guarantee sustainable living environments for the future.



Bertram Schmitz, CEO of Fr. Sauter AG and the SAUTER Group

Dear Friends of SAUTER,
This issue is unlike any of the others that you have been used to reading in the past. This issue fires a starting shot and marks a radical change. Together with you, we aim to start our journey towards a true symbiosis of natural habitats and human living environments. Harmony between the two can prevail only if we protect the natural world, and if we achieve maximum energy efficiency to bring about a dramatic reduction in greenhouse gases. As of now, this is the mission for our international group of companies in more than 60 countries.

The fact is that about 15% of global greenhouse gas emissions are caused by buildings. A major reduction of these emissions calls for specialists who focus on energy-efficient solutions in the building management sector. To some extent, our outstanding ability to do just this is part of our very nature. Almost 100 years of experience forms the basis for our expertise in solving problems. SAUTER has these specialists in four areas of competence: Components, Systems, Services and Facility Management. Our flexibility and strategic orientation allow us to specialise.

One point can be taken for granted here: we pay equal heed to economic and ecological requirements. This principle translates into the highest requirements for the functional and technical quality of our solutions. Complex user requirements must be considered, and life-cycle costs have to be reduced to the minimum. Ultra-modern technology is the only way to achieve this.

Thanks to our innovative SAUTER EY-modulo solution kit, we shall once again prove that SAUTER is equipped to achieve these objectives. It has four goals: first, to save energy; second, to cut costs; third, to make energy consumption transparent and to visualise it, giving users a tool that can continuously optimise energy consumption; and fourth, to press ahead with the use of renewable energies in the building management of the future.

We have a clear corporate strategy and an equally clear vision. We are implementing both of them with a new brand strategy. This is why you will notice that SAUTER now has a new look. The new logo is intended to express our brand personality and to link our long tradition to this vision. You will recognise the familiar forms and colours, but you will also sense the new and naturally refreshing aura of the SAUTER brand. This is something more than an ordinary brand logo: at the very first glance, we aim to convey the values that SAUTER has in store for you.

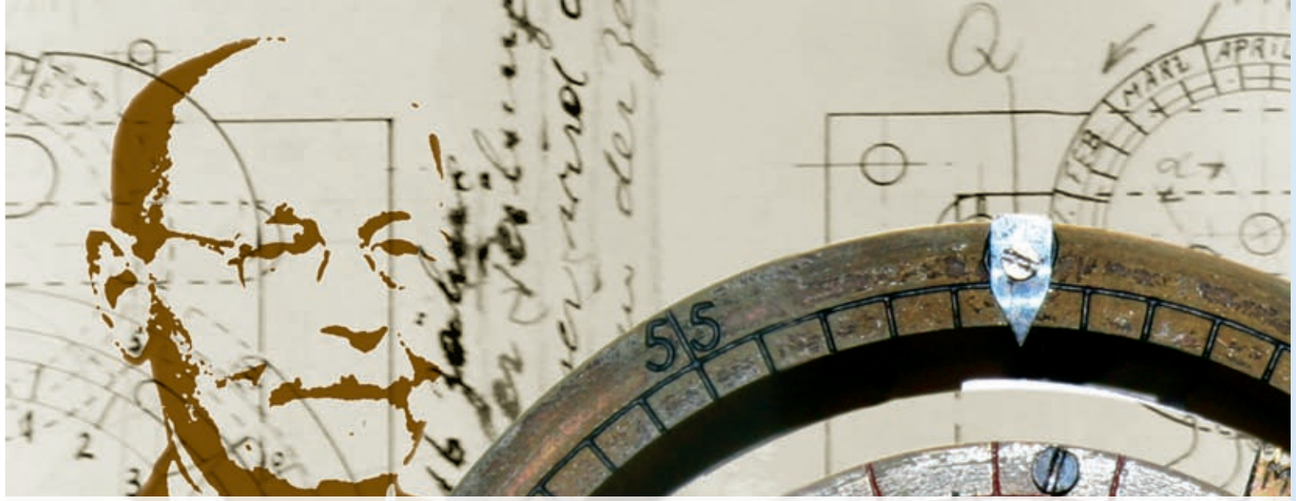
The repositioning of our company and the development of an innovative solution kit was possible only with a great deal of personal commitment and a lot of extra work. I would like to express my thanks to all the employees of the SAUTER Group for this.

Dear Readers, our enthusiasm as we tread this path is equalled by our resolve to inspire you for our objective: living environments that have a future. Join us on the journey!

Bertram Schmitz

From Grindelwald to Surinam*...

A journey back to the roots of SAUTER's international orientation today



... the path to a global brand.

Dr. jur. LL.M. Rudolf Merker, Chairman of the Board of Directors of Fr. SAUTER Holding AG and Vice-Chairman of the Board of Directors of Fr. SAUTER AG

More than anything else, a brand story is the story of the people who chart the course for the company so as to give it a visible presence. A quotation on this point from Ms Gertrud Höhler*²):
"Hiding behind products doesn't work any more; the company's success is determined by its presence. People want more than mere goods – they want to encounter people. This means that the key to market success is quality – newly defined as the quality of the people, not of the products."

We'd like to take a look at how things used to be. How did Friedrich SAUTER, our founder, steer the company to international success? Facts discussed this question with Dr. Rudolf Merker, the grandson of SAUTER's founder.

Facts: Dr. Merker, what kind of a man was Friedrich SAUTER?

Merker: *Above all, he was a creative individual – after all, he was an inventor, of course. Throughout his life, he invented and developed the products himself. Whenever there was an opportunity, he noted down his ideas on any piece of paper he could find. But he was also a good-humoured, open-minded person.*

Facts: Did he have a technical education as well?

Merker: *At the end of the 19th century, Grindelwald was an up-and-coming holiday resort with large numbers of foreigners, so people had to learn English and French. That's how Grindelwald came to have a secondary school, which my grandfather attended. This moved him out of the farming environment and enabled him to go on to a technical college, where he obtained two qualifications: as a mechanical technician and an electrical engineer. Electrical engineering was still a new and developing discipline at the start of the 20th century. He then worked for ten years at Brown Boveri & Cie. in Baden, starting out in the test laboratory and then as a handover engineer, managing the installation and commissioning when machines were handed over. Even at that time, this work took him to different parts of the world – not only Europe, but also Asia Minor, Egypt, Turkey and North and South America, even as far as Chile.*

Facts: And how did the establishment of Fr. SAUTER AG come about in 1910?

Merker: *My grandfather started putting his ideas into practice in the basement of the house where he was born. He abandoned his highly promising career with Brown Boveri to do this. This basement was the birthplace of his first time-switch, and it was from there that he attempted to put his inventions on the market. However, Grindelwald did not prove to be ideal as a location. There were no trained workers and transportation was difficult. That is why Friedrich SAUTER brought his up-and-coming firm to Basle.*

Facts: What was the motivation – or, as we would say nowadays, the vision – that drove the founder of our company?

Merker: *He didn't sell the afore-mentioned time-switches just to the nearby electricity works – at a very early stage, he was also selling them abroad, in Germany, France and the Netherlands, etc. Even in those days, he recognised the importance of export markets rather than just concentrating on Switzerland.*

Facts: Which products was he already able to export at that point?

Merker: *One very successful product, for example, was the electric boiler, which became the first product brand or as we would say today, "generic concept". In France, people used "Cumulus" – the product name of SAUTER's electric boiler – as the normal word for a hot water boiler.*

Facts: As long ago as the 1920s, SAUTER had its own manufacturing facility in France, at Saint-Louis. How was it that branches and representative offices were set up abroad at such an early stage?

Merker: *If you wanted to sell in France, you had to produce in France. Thanks to the periods that he spent abroad for Brown Boveri, Friedrich SAUTER had a good command of French and English. Together with his good-humoured nature and his open mind, this certainly played a role that should not be underestimated in the company's success on so many export markets.*

Facts: One final question: What is important for the company today? What extra benefits do you think SAUTER offers, in terms of what our company achieves?

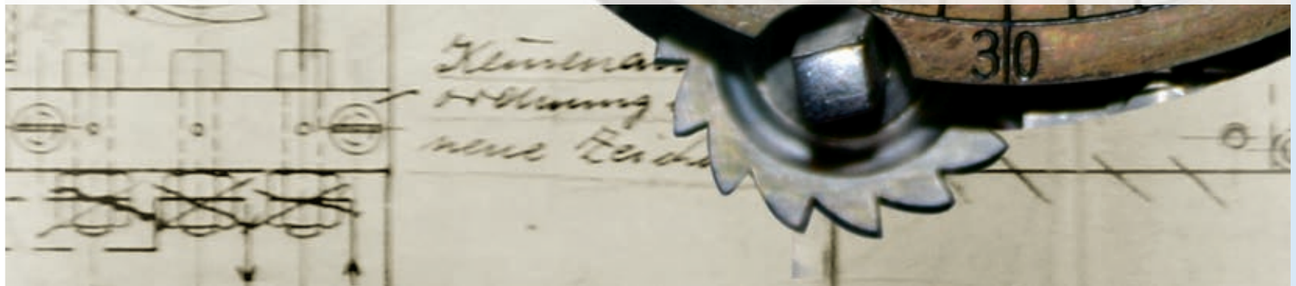
Merker: *I think it's important that SAUTER's products not only offer the customer specific benefits, such as a pleasant indoor climate, the right temperature and humidity, etc. but also play a major part in relieving pressure on our environment, for example by saving energy.*

Facts: Dr. Merker,
thank you for the interview.

Ulrich Graf, Chairman of the Board of Directors of Fr. Sauter AG and Vice-Chairman of Fr. Sauter Holding AG

Facts: Mr Graf, as Chairman of the Board of Directors of Fr. SAUTER AG, you share the responsibility for steering the company's destinies. How do you view the firm's repositioning?

Graf: *Friedrich SAUTER invented the time-switch with the aim of reducing electricity costs, to give just one example. Seen in this light, energy efficiency has been the mission that has driven the company ever since it was founded. Over recent years, of course, SAUTER has increasingly placed its vast technical and specialist know-how at the service of efficiency in the use of resources and energy. This is expressed most clearly in our new product developments and our new brand presence. The path upon which we have embarked has the full support of the Board of Directors.*



* "Im Surinam", our present address in Basle, came into being in about 1800 when a Swiss couple inherited a plantation in Surinam (or Dutch Guyana as it then was) and gave the name of "Little Surinam" to their property in Basle.
*²) Management consultant, visionary, professor and doctor of literature.

How water, air, sun and sky became a trademark

SAUTER on the way to becoming a brand personality

Dipl.-Ing. Jean Schwartzentruber
Executive Vice-President, Marketing and Sales

Sweeping curves that naturally reflect water, air and sun are combined with the traditional wordmark: the SAUTER trademark simultaneously conveys trust and radical change.

When does a company name become a brand? If nothing more than a change of image is involved, the answer is clear: never! The key factors here are always identity and genuineness, as well as a promise of performance that has to be kept at every level of the company. SAUTER has set itself the goal of following this path which will lead to a successful brand.

When a brand starts to speak.

People know that SAUTER has had a successful presence on the market for almost 100 years. As they work with us on a daily basis, customers and business partners learn that this is based on solution expertise and excellence in energy efficiency. Word is getting around that SAUTER has pledged to integrate renewable energies. But does the SAUTER brand speak the same language? At first glance, with clear messages? Again, the answer is clear: yes, from now on! Our strategic corporate orientation and our clear vision also herald the start of a highly promising future for SAUTER.

When do living environments have a future? Or, rather, where?

Once a company has achieved success, it should establish a brand that declares values. SAUTER is in an excellent position to do just this: as a specialist, our range of service stands out from the rest, based on an idea that inspires our customers and employees alike. The company is one of substance, and the company logo has a long tradition. If building management solutions not only include innovative technology to increase comfort and well-being but also cut energy consumption dramatically, the outcome is good for all living environments – those of people, of buildings and of nature, which must be protected for future generations. This promise of performance is embodied in a message that should be spoken in the same breath as SAUTER's brand name in future: "Creating Sustainable Environments". This is a commitment given by a specialist, and above all it should highlight our lead in energy efficiency over those who offer total solutions.

Faces and clothes – in blue and yellow.

Our entire brand presence has been geared to this message – starting with the logo which visualises tradition and trust in the wordmark, combined with the natural colours of water, air and sun. The basic elements of our (redefined) corporate design combine strong brand signals for rapid recognition and stringent communication. You will encounter them time and again: the SAUTER sky, the SAUTER curve and the inimitable SAUTER tone that expresses life and sustainability. The brand visibly comes alive, and it takes on a real personality with true character. Starting on 6th April – when the light + building exhibition opens in Frankfurt – SAUTER will launch its new look, after almost a year of brand development work. But what is one year in the development of genuine brand communication?

More than just a promise.

Continuous updating of the brand will be the watchword for the years to come, so that people notice it and so that customers and partners associate the right promises of performance with SAUTER. Each day, our employees will renew their efforts to ensure that these promises are kept. This is the only way for a company name to become a genuine brand with which people associate values, a brand that makes them experience emotions and identification. If SAUTER itself becomes a living environment as a result, the "brand" project will have succeeded. We are prepared for that moment.

Jörg Sigg, Dipl. Ing. HTL, Product Manager

The ten-point fitness programme for buildings.

Reducing emissions, increasing climate comfort and cutting energy costs.

There are plenty of reasons for improving energy efficiency in buildings – in terms of both economics and ecology. Thanks to the SAUTER ECO[10] modular fitness programme, energy costs can be cut by up to 30 % and user comfort can be improved at the same time.

Building technology has now reached a standard that permits high levels of energy efficiency, but optimisation is possible only when information can be called up and visualised at a central point, with the help of networked building and room automation. The recorded values show where energy is ‚falling by the wayside' and consumption can be improved. The goal of the SAUTER ECO10 energy-efficiency programme is to set the right course so that operating costs can be cut throughout a building's lifetime, thereby safeguarding investments.

1

We continuously deploy ultra-modern technologies to centralise and visualise energy-relevant information.

Consumption figures on their own merely reflect the total energy used in a building. But it is important for the owner and operator to know how much energy is consumed in relation to the useful area, or per unit of time. This information can also be obtained in detail for individual parts of the building or items of equipment. SAUTER building automation can determine key energy figures from the data pool, and it can visualise energy consumption with presentations based on time intervals or comparisons with previous periods.

2

We carry out a critical comparison of your consumption with relevant internal and external benchmarks.

The tasks of modern building management include ongoing optimisation of energy costs. For example, to enable comparisons of energy consumption with previous years or the same months in previous years, the building automation system first visualises the consumption data in the form of key figures. However, it is possible to verify whether the building technology is operating cost-effectively only when these figures are compared with relevant energy benchmarks for the type of building in question.

3

We compile a customised energy concept, taking account of the total costs throughout the building's life cycle.

To an increasing extent, operating costs for buildings are becoming a key criterion. Comparative tools, such as the energy certificate, classify the building according to its energy expenditure, thereby influencing the value of the real estate. So, at an early stage of planning, decisions already have to be taken as to which types of energy production, distribution and usage are cost-effective. Thanks to its many years of experience, SAUTER supports its energy advisers when it comes to planning the building technology. Factors that determine the choice of systems include not only the computed requirement, but also the structural design of the building, the usage of the property and the time requirements for the provision of heating, cooling, air and light.

4

We shall show you the possibilities for using renewable energies, from the ecological and economic perspectives.

Renewable energies can meet a large proportion of the total energy requirement. The aim here is to combine renewable energies with building technology in an intelligent and efficient manner – for example, by combining geothermal heat or solar energy with conventional types of heating and cooling technology, or by coupling power and energy with parallel power generation; the goals are always to optimise the utilisation of the primary energy and to make efficient use of renewable energies.

5

We drastically cut emissions, ensuring that you can make a sustainable contribution towards protecting our living environments.

As well as evaluating consumption values, energy analysis tools also calculate the emission figures for your building. These provide visible proof not only of energy saved, but also of the effects of energy optimisation measures on climate protection. Another aspect is that our products are manufactured according to the latest findings, using materials that protect the environment. In this way too, our customers play an important part in minimising CO_2 emissions.

6

We have confidence in our pioneering eu.bac-certified products and solutions.

The eu.bac (European Building Automation Controls Association) programme was set up to certify products in the building automation sector on the basis of international standards. This makes it easier for building technology users to select suitable products. For example, SAUTER's ecos intelligent unitary controllers have already been certified to the eu.bac standard with excellent results.

7

We network all the systems in the building and rely on our open, flexible and universal room and building automation.

To ensure an unrestricted flow of information across all the building's systems in order to analyse energy, SAUTER not only backs the global BACnet standard but goes one stage further: with BACnet from management level through to room automation, SAUTER redefines the concept of "universality".

8

We co-ordinate the technologies of the building shell, the building automation and the system engineering.

Building automation is directly linked to the actual structure of the building, its users and even the conditions prevailing outside the building: from self-adapting control loops and the inclusion of marginal conditions such as air humidity and quality, through to the provision of heating and cooling energy, controlled according to the weather forecast. For instance, SAUTER's CASE Suite libraries take account of the storage capacity of parts of the building in connection with groundwater for cooling with modern energy systems and thermoactive components.

9

We encourage your users to develop an energy-conscious attitude.

Once energy expenditure is expressed not only in figures but also in relation to the building, with the help of overviews and graphics, there is a change in the way people perceive the responsible use of energy. This approach also makes it possible to see the success of energy optimisation measures – on the visualisation interfaces or the automation systems, or directly on the employee's PC screen. This encourages a responsible attitude to energy resources, and changes people's behaviour.

10

We assure you that your operating costs will be cut.

From the very first day of usage, you have complete control over your property's energy consumption. And as soon as your modernisation is complete, you will know the total saving on energy costs and CO_2 emissions. Continuous energy monitoring and ongoing optimisation measures will safeguard your investment.

SAUTER EY-modulo: Making intelligent use of the flow of energy within buildings.

Nowadays, a building's quality is judged by its energy consumption. The building technology has the job of making energy utilisation as efficient as possible, while conserving resources. The modular SAUTER EY-modulo automation system offers the latest state of the art in a compact package. It ensures that all types of energy are used efficiently in the building, with capacity left over for future plans.

High efficiency with a compact design: because the SAUTER EY-modulo system is modular, it adapts to changes in usage.

Accurate, targeted control of energy flows in line with demand.
The living environments of the future have to adapt to their users and to the current room situation. This is why building automation and its complex systems require effective and flexible control. SAUTER EY-modulo offers accurate and targeted control of energy flows in line with demand, through the arteries that supply the building. High-precision zone and power control, or lighting management – so that light, heat, ventilation and air-conditioning are provided at the right time, in the right quantities and at the right places.

Open to new ideas.
Open systems are called for in new buildings, while refurbishments require the possibility of integration and expansion at a later stage. To meet these needs, automation technology must communicate openly, in a way that is compatible with the existing building automation components. Because SAUTER EY-modulo is backwards-compatible, it allows modernisation work even while operation is in progress, so that any adverse effects and interruptions to operation are minimised. In this way, the quality of building automation plays a key part in the quality of the building.

Modular system integration – your guarantee for the future.

Even when supply networks branch out further and new tasks are created, SAUTER EY-modulo ensures that the building automation system is equipped to deal with future extensions, changes of use and refurbishments. SAUTER EY-modulo guarantees reliable, energy-efficient supplies of heating and cooling energy, lighting and electrical power for tasks such as fire protection or room occupancy management. Modules that can be integrated at any time allow the continuous development of complete, cost-effective solutions for complex building technology systems. The compact space-saving modules can also be retrofitted with no problems.

Renewable energies are becoming part of the building concept.

Integrated approaches are now being incorporated into the planning of buildings – examples include the efficient use of conventional forms of energy together with the integration of regenerative energy sources. While the building is in use, cost-effectiveness can be improved by optimising the energy consumption without interrupting operation. SAUTER's automation technology implements consistent end-to-end building management that utilises the available energy sources to prevent wastage of energy that "trickles away". The result: building automation becomes the key to cost-effective, sustainable construction.

Dr. Jürg Bichsel, Manager, Development and CIT

Leading through knowledge.

SAUTER's CASE Suite software

SAUTER **CASE** Suite

Knowledge is the most valuable commodity that we possess. In-depth expertise is an indispensable requirement, especially in today's highly competitive market and in view of the breathtaking development of technologies, products and services in the building automation sector. For our customers, the advantage of our international orientation is that we can draw on pooled experience from large numbers of very different application solutions. This focused know-how is integrated into the SAUTER CASE Suite software. No matter what the customer requires, SAUTER CASE Suite always has an excellent solution to offer.

Sound, broad-based knowledge in compact form from a single source.
Our SAUTER CASE Suite engineering software is a dependable storehouse for planners of building automation systems. With its clear libraries, SAUTER CASE Suite provides rapid and reliable access to data and function modules that will ensure efficient project planning. This means that SAUTER's customers benefit from a knowledge data base that offers the required data material, no matter how complex the project might be.

State-of-the-art know-how.
SAUTER's engineers have recorded tried-and-tested automation solutions from countless projects in libraries, and the data have been combined in the SAUTER CASE Suite software to plan a huge variety of building automation systems for almost every type of application. Even if the planning process is subject to time constraints, users always receive efficient, comprehensive solutions, tailored to individual requirements and special national features.

The CASE Suite Know-How Centre offers practical knowledge for the entire range of technical building equipment:

- *Heating*
- *Ventilation and air-conditioning*
- *Cooling and refrigeration*
- *Electrics*
- *Room automation*
- *Sanitary installations*
- *Smoke clearance and fire protection*

... to give just a few examples.

The building was designed by the architects Weber & Hofer of Zurich.

Power Tower in Linz.

A high-rise office block uses the energy from heaven and earth.

The new group headquarters of the Upper Austrian power utility, Energie AG Oberösterreich, is currently under construction in Linz. Known as the Power Tower, this is no ordinary office complex – even before completion, it is setting the benchmark for energy efficiency in large buildings. With its nineteen storeys, this will be the first high-rise office building in the world that uses renewable energies to meet almost its entire energy requirement for heating, cooling and fresh air.

Farewell to fire: energy from sun, earth and water.

The power utility's new building has neither gas nor district-heating supplies: instead, it is connected directly to the sun and the earth. As the tower continues to rise at a busy inner-city intersection in Linz, it seems to be imitating a sunflower: the building complex rises to a height of 75 metres so that it can trap the sunlight on its facade area of 700 square metres. The solar power station on the south-western side of the Power Tower will be one of Austria's largest photovoltaic facilities when it is completed in September 2008. Below the building, 46 geothermal sensors extend 150 metres downwards like roots, to draw thermal energy from deep underground. In summer, the relatively cooler temperature below ground will ensure a pleasant climate in rooms and offices.

An active contribution to climate protection.

One major factor in the overall energy concept is a combined heat pumping plant for heating, cooling and ventilation. Thanks to the novel process, the office building should use only half of the energy that conventional building technology would require for heating and cooling. The Power Tower saves about 300 tonnes of CO_2 per year as compared to a similar high-rise building – an active contribution to climate protection. The energy needed for lighting, heating and cooling is supplied from regenerative energy sources: the sun and the earth, and also the groundwater. The energy concept provides for cooling energy in the computer centre to be pumped from two groundwater wells. The well system will support heat gain during winter.

Setting an example for a sustainable approach to energy.

The Power Tower makes no use of fossil energy sources whatsoever. With its new group headquarters, Energie AG Oberösterreich is moving towards the goal of independent energy supply. The power utility considers that it has a responsibility when it comes to efficient and sustainable energy usage, so its 19-storey office tower should not merely be a new administrative building but also set new standards for the future.

Sun: an intelligent facade produces power and provides shade.

This slimline building shows its sustainable energy concept to the world by using sunlight as an inexhaustible source of energy. The photovoltaic installation on the south-western side of the office tower is designed to produce 42,000 kilowatt hours of solar power per year. For Energie AG, this solar power station represents a milestone in the implementation of its philosophy of energy efficiency and sustainability. The multi-functional shell, made of glass and materials with high thermal insulation values, features many of the design characteristics of a passive building. Triple glazing and heat insulation restrict heat losses to a minimum, while ensuring that the introduction of solar heat into the building during summer is reduced by 90 per cent.

Günther Minichberger,
Project Technician, Systems

Earth: heating in winter, cooling in summer.
Geothermal energy ranks as an equally inexhaustible source of energy. To obtain thermal energy for heating, the office tower taps the resources within our own planet rather than turning to solar energy. In the Power Tower's central technical units, geo-coupled heating pump systems draw geothermal heat energy from underground, raising it to a higher temperature level so that it can be used for heating purposes. At the same time, the heat pump systems are able to remove excess heat from the building. Heat pumps operate on the same principle as a refrigerator: for cooling, the unit simply operates in the opposite direction.

Energy from the depths reaches the heat pump systems in two ways. A total of 46 pipes, paired together, plunge 150 metres straight down into the earth, distributed over two geo-sensor fields. After a 180° deflection at the lower end, the thermal transfer fluid which has been heated up underground flows back into the building through the pipes. The geothermal sensors attain a total length of 6,900 metres. Geothermal heat also circulates through a total of 90 foundation columns on which the 75-metre-high office building stands. The concrete pillars accommodate pipes which draw heat from ten metres below the surface, or carry heat away from the building into the earth, depending on the requirement for heating or cooling.

Water: constant water temperatures cool the computer centre.
Thermal energy is pumped from the groundwater via two wells in order to operate the heating system in winter. In summer, the well water is mainly used as cooling water for the computer centre and to cool the supply of fresh air. If heating energy is required, the system operates as a heat recovery facility: in the computer centre's cooling circuit, the water heats up so that the heat can then be reutilised via the heat pumps in order to heat the building.

The energy concept makes heavy demands on the building's "central nervous system" – the building automation system.
Because it has minimum energy consumption, reduces the cooling loads and uses geothermal and solar energy, the Power Tower reflects the state of the art. However, this innovative energy concept makes heavy demands on the control technology. Changing operating conditions and load situations, together with heat requirements for certain zones of the building, at the same time as a cooling requirement for the computer centre – these aspects call for intelligent load management and a correspondingly large number of control and regulation processes.

The heating, cooling and ventilation for the Power Tower are supplied and controlled via seven central technical units. Radiators, chilled beams and fan convectors are controlled by SAUTER ecos intelligent unitary controllers. According to present plans, about 6,000 data points will be linked to the building automation system. A separate bus system is being developed to monitor about 420 fire protection dampers in the ventilation system.

Visualisation for the control centre (which also provides a graphic display of monitoring for the fire protection dampers) is implemented with SAUTER's novaPro Open building management software. This makes it possible to centralise all the user profiles and authorisation data in one main data base, so that users benefit from a reliable management system that is insensitive to errors. SAUTER's contribution to the Power Tower project also includes the development of an energy monitoring system with separate display units.

Summary
The building's consistent use of renewable energies, together with the photovoltaic facility integrated into the facade, offers a shining example of futuristic energy-efficient concepts for modern commercial buildings. The Energie AG Power Tower in Linz sets new global benchmarks for energy efficiency in large office buildings.

The revolutionary energy concept makes the new group headquarters of Energie AG Oberösterreich the first high-rise office block with the design characteristics of a passive building.

Facts interviews some renowned experts from various professional backgrounds.

Opportunities for using renewable energies.

Prof. Dr.-Ing. M. Sc. Econ. Manfred Hegger Specialist in design and energy-efficient construction at Darmstadt Technical University, Germany

Facts: Is it already possible to make efficient and appropriate use of renewable energy sources in buildings?

Hegger: *Buildings differ from other objects that we use every day in one very major respect. They meet all the requirements for the use of renewable energy sources. They are linked to the ground and they can utilise the uniform temperature level close to the earth's surface, or they can draw geothermal heat from lower levels. Air flows freely around buildings, so they can benefit from pressure differences and wind energy. They are exposed to daylight, which means that they can tap the most powerful energy source that is available to us: the sun. Depending on the building's location, other renewable energy sources may be available: groundwater and flowing water, biomass and biogas, to mention just a few. To an increasing extent, buildings can liberate themselves from the costs, uncertainties and hazards of conventional energy sources.*

The challenge of sustainable development holds out tremendous opportunities for the construction sector: new scientific, technical and design-related developments in a sector of the economy which has lagged behind for some time in terms of innovative strength, new export opportunities and a renewed role as the motivator for long-term lines of social development. Expectations of creative opinion leadership from architects are correspondingly high.

The efficient use of resources and energy is becoming a key quality characteristic of architecture. Perfected technologies are available so that we can make efficient use of the resources that the earth can offer us, without impairing its natural beauty. It is also true that the methods used in architecture are, at the same time, the instruments of material-efficient and energy-efficient construction – such as lightness and mass, protection and transparency, texture and colour, economy and effectiveness of space. Used creatively in combination with new technologies and revised objectives, these aspects are giving birth to a new culture of building: sustainable and efficient. Architects are increasingly tackling long-term global and social issues through their buildings, and they are creating patterns of construction that provide responses to those issues.

Rolf Disch, Solar Architect, Freiburg, Germany

Facts: Is the use of renewable energies changing architecture? Which design aspects are playing a part in this?

Disch: *The use of renewable energies is in the process of changing our creative approach. In the next ten to fifteen years, solar architecture will become established as the standard, and will already be influencing urban construction planning: this starts with the orientation of the building, the provision of transport routes and the question of how to supply energy to a new residential area. As regards design, the use of renewable energies can and should be visually emphasised on the building itself.*

Facts: Does the planning of building technology call for an integrated approach?

Disch: *Energy-efficient building design starts out with the question of how the building can be cooled. This calls for an integral and integrated concept, because - as far as possible - no additional conventional energy should have to be used for cooling. Examples include passive cooling and intelligent facades that keep heat away in summer but channel it inside during winter.*

Facts: What importance do you attach to the use of renewable energies in new buildings or refurbishments?

Moschberger: *Due to the climate protection targets set by the European Union and the obligations entered into by the member states, renewable energies are playing an increasingly important part in the building sector as a whole. Because of the large number of residential buildings put up prior to 1977, the use of regenerative energy sources and the refurbishment of existing buildings represents the greatest challenge. At present, the installation of systems that utilise renewable energy sources is receiving financial support from the public sector. In the medium term, however, a legal obligation will be imposed on the basis of the policy discussions currently under way in France.*

Christophe Moschberger, Head of the Energy Efficiency and Renewable Energies Section in the "Cluster énergivie" network of companies, Alsace, France

On the other hand, the public sector has rather neglected the aspect of energy efficiency in the past. This situation has now changed radically. Energy efficiency and low-energy buildings are very much centre-stage. Buildings of the future will produce more energy than they consume. To achieve this, systems to generate renewable energy must interact optimally with energy-efficiency measures in areas such as ventilation and control. Building technology and an integral approach to planning will, therefore, play key roles in the future.

One for all.

The thermal actuator that fits anywhere.

Accurate control is particularly necessary where people are closest to heat and climate in a building. Heating and cooling systems – such as underfloor heating and radiators, chilled beams and air-conditioning convectors – require precise control of flow rates. Building automation is confronted with a wide variety of installation systems and designs, but SAUTER's AXT2 now provides an actuator for every application.

Flexible adaptation to control tasks with reliable operation.
Our thermal valve actuator can adapt to a variety of control principles. Depending on requirements, it is able to control radiators and radiant heating or cooling systems with a simple two-point control, pulse-pause modulation or continuous control with variable control signals. Simple adaptation to every closing dimension and 125 N of actuating power ensure that no energy losses can creep in, even after years of operation: the SAUTER AXT2 actuator guarantees 100% tightness even as valve wear increases.

Installed and connected in a trice.
Thanks to its patented Low-Force Locking® system, and because it is so simple to connect up to the power supply using the SAUTER plug, the actuator can easily be installed onto a wide range of valves. The SAUTER AXT2 actuator is equally easy to install in locations with difficult access. The actuator is simply placed onto the valve with no force, and locked with the bayonet closure. Plugs are available with different functions and customer-specific cable versions to make easy work of the power connection.

Silent and durable.
The SAUTER AXT2 thermal actuator ensures constant room temperatures, with only a hint of a whisper. Users are only aware of a pleasant indoor climate, while the job of controlling is performed out of sight. Reliability is guaranteed throughout the actuator's lifetime, because the electrical components and the expansion element inside are encapsulated for protection against moisture.

Easy handling for monitoring and maintenance.
To make maintenance simple, the position of the actuator is visible from all sides and is easy to detect by feeling it. The version with manual on/off adjustment allows a hydraulic circuit to be opened and shut off manually and enables venting on start-up.

SAUTER AXT2 is the latest development in thermal actuator technology for unit valves used to control the room temperature: energy-efficient control technology combined with an elegant design for cost-effective operation of heating and cooling systems in the living environments of the future.

Fabien Peter,
Product Manager, Field Equipment,
Valves & Actuators

Basle beats Kyoto. A win for both the environment and the client.

If you want to help to shape the future, you have to start at home.

Ulrich Debrunner, Dipl. Masch. Ing. HTL/STV, Head of Production

136 states have now endorsed the Kyoto Protocol by pledging to cut their greenhouse gas emissions by an average of 5.2% between 2008 and 2012. Many countries have committed to far greater reductions. Other countries – as well as home-owners and industrial firms – will fall short of the agreed standard. By setting an example with its own new industrial building, SAUTER is showing how emissions can be cut by half, one step at a time.

If you preach energy efficiency, you should also practise it. The project planners for SAUTER's new industrial building, which will house production, assembly and administration departments, have set an example by putting this principle into practice. The concept shows not only how energy consumption can be dramatically reduced, but also how the quality of comfort and usage can be substantially increased at the same time – and with no extra costs.
Based on the assumption that production and logistics were to remain at the same premises in Basle, there were four requirements to meet:

1 The old buildings have to be replaced, both as buildings and in terms of working technology. For example, the loading capacity of the ceilings and the fire protection standards no longer meet current requirements.

2 Maintenance costs are constantly rising due to the lack of insulation, and they have to be cut. This requires a complete refurbishment of the shell of the building.

3 A prestigious environment for customers, suppliers and employees must be created in keeping with the company's standing.

4 The transport and goods flow – the logistics – must be optimised and adapted to modern just-in-time processes.

Ultimately, there is sufficient potential for change here to justify thinking about a new building.

Reducing CO_2 emissions by over half within just 10 years.

SAUTER tackled its first in-house assignment in connection with climate protection and energy efficiency four years ago, when the heating system was refurbished and converted to a modern gas heating plant. This investment already cut the CO_2 emission figure by 32% to 34%. Now, SAUTER is preparing for the acid test with its new building in Basle: on completion in 2010, it will achieve significant energy savings and a further reduction of the CO_2 figure to about 55% as compared to the initial value in 2000.

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Building to the MINERGIE® standard

In Switzerland, the voluntary MINERGIE® standard allows efficient energy utilisation and extensive use of renewable energies, accompanied by an improvement in quality of life, guaranteed competitiveness and a reduction in environmental pollution. MINERGIE® defines the goal in the form of limit values for energy consumption. There are many ways to achieve this. The important point is that entire buildings are regarded as integral systems: the building shell together with the building technology and services. After reviewing the plans and calculations, it emerged that SAUTER's new building would meet the MINERGIE® standard, so SAUTER will receive the coveted quality label once the building has been completed and occupied.

The conditions:

- Groundwater heat pumping system (using the groundwater to heat and cool the building).
- 100% provision of heating energy by heat pump up to an outside temperature of approx. –2°C.
- Excellent insulation for the building shell.
- Ventilation plant to ensure systematic air renewal (controlled ventilation with heat recovery).

Additional costs for the MINERGIE® standard:

- Virtually no additional costs are incurred for the building shell, because the strict heat conservation certificate for new buildings in Basle is almost equivalent to the MINERGIE® standard.
- The controlled ventilation would also have been required without the MINERGIE® standard, because it meets the minimum hygiene requirements as well as removing some of the thermal loads that arise.
- The selected method of cooling with groundwater is favourable in terms of energy costs. Furthermore, the construction site is favoured with a subterranean groundwater inflow.
- When cooling with groundwater, it is also advisable to use the heat pump to produce heating energy (combined use in summer and winter). Heat recovery units have to be installed for ventilation and air-conditioning systems even if the MINERGIE® standard is not applied.
- The additional MINERGIE® costs for the use of groundwater (well installation, pipes, heat pump, etc.) would be balanced out by conventional added costs of a similar amount for the use of a chiller with a reverse cooler (but with this design, 100% of the heating energy would be supplied by the existing gas heating system).

Summary

Thanks to a well-insulated building shell and the use of groundwater as a renewable energy source, even more energy costs will be saved and the CO_2 emissions will be cut again, by about 20%, with monitoring and control by SAUTER EY-modulo, the very latest in building automation.

The higher surface temperatures and the renewal of the air will improve the indoor climate, increasing general comfort for users.

Optimising energy usage during operation was already considered in the planning phase. The SAUTER ECO[10] energy-efficiency programme should continue to reduce consumption and operating costs on a sustained basis, one step at a time. In this way, the entire concept will ultimately help to preserve the building's value in the long term.