

insights

**EnergyManager PV smart:
the optimal, digital solution for
PV systems and heat pumps.**

**An interview with former Chair
of the Board of Directors
Peter Frick.**

**E-commerce tailored
to our customers' needs.**



Dear readers,

Albert Einstein once said, “I’m more interested in the future than the past, because the future is where I intend to live.” That may well be true, but looking into the future isn’t easy. The coronavirus pandemic and the ongoing conflict in Ukraine show how quickly a situation can change out of all recognition.

Let’s start by taking a look back instead. During the coronavirus pandemic, so many things turned out differently from how we would have expected. Not only did we experience great changes in our personal lives, the economic impact of the pandemic also challenged us more greatly than we could ever have imagined. We saw supply shortages across the board, which in turn resulted in enormous price hikes, and not least the chip crisis, whose impact on the entire global economy exceeded even the boldest forecasts. For instance, who could have imagined that car manufacturers would have to shut down production facilities, in some cases for weeks or even months at a time. At the same time – and not just as a result of the pandemic, but probably amplified by it – our industry saw growth in demand at a rate that hadn’t been recorded in decades, particularly for alternative energy systems, district heating and gas condensing technology. This demand far exceeded what we were expecting at Hoval, and we weren’t the only ones to be taken by surprise. Could anyone have foreseen a development like this? At the end of 2020, many forecasts still pointed to a gradual recovery of the economy.

Our instinct is to assume that developments will continue on the same path as before. However, the past year and the recent developments in Ukraine have made it clear how quickly and fundamentally things can change. Who would have thought just a few weeks ago that the conflict in Ukraine would escalate to such an intense level. Understandably, this means that climate discussions are not the top political priority at the moment.

But I am confident that, here in the field of climate-friendly heating and ventilation technology, we will continue to see some of the most exciting prospects and an above-average level of demand for years to come, even if the development can't always continue in a linear fashion in our industry. Because of this, flexibility will continue to be a priority.

At the same time, however, the coronavirus pandemic and its consequences have shown what companies are really made of. Companies like Hoval, with our strong corporate culture focused on problem-solving and team spirit, are at a clear advantage in times like these. I am very proud of and grateful for the way our team has worked with our partners to overcome the challenges we've faced. That's why I was especially pleased that we were able to win the prestigious "Architects' Darling" award in Switzerland, which recognises our passion for providing excellent customer support. Our former Chair of the Board of Directors, Peter Frick, played a crucial role in shaping Hoval and its special corporate culture for over 60 years. I would therefore particularly like to recommend the interview with him in this issue.

Unlike the challenges relating to our supply chains, here at Hoval, we love taking on the challenges presented by ambitious projects. You can also read about how Hoval achieves the challenging task of ventilating high-ceilinged halls, discover an extremely energy-efficient way to produce large volumes of legionella-free domestic hot water and find some examples of clever heating system renovations in old buildings. Our passion for sophisticated technical solutions also shines through in the article on our HomeVent® ER comfort solution with the new Isi system.

In recent years, Hoval has also invested heavily in the development of digital solutions. One of these new products is our EnergyManager PV smart, a sophisticated tool that enormously increases added value for Hoval heat pump

customers with a photovoltaic system, without incurring any additional costs. Meanwhile, we have also made substantial improvements to our e-commerce solution. During this process, we made an effort to collaborate with some of our long-standing partners, such as the company Gebrüder Nater.

Although the outlook for our industry is very positive, we're still going to feel the impact of the pandemic and the war in Ukraine. But our family-like company culture, love of technology and passion for finding sophisticated solutions for our customers will continue to form the foundations on which we build. We see digitalisation and digital solutions – a number of which feature in this issue of Insights – as a great opportunity to boost added value for our customers. Nevertheless, one thing remains clear: here at Hoval, we put people first!



Peter Gerner
Hoval Group Senior Management
Co-CEO

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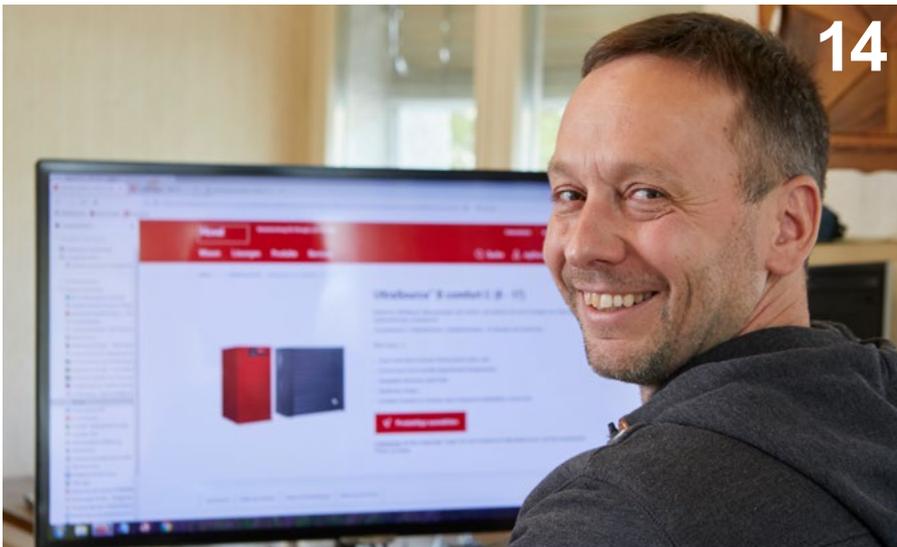
The local heating network for the town of Kaufbeuren connects four buildings and has considerably reduced CO₂ emissions.

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At the renovated Cappuccini Resort in the Franciacorta region, a Hoval system solution ensures a comfortable indoor climate for guests.



60 years of service

Peter Frick on his life's work



Hoval is shaped by people with vision, innovative spirit, high standards of quality and technology, as well as a keen understanding of energy and a sense of responsibility towards our environment. One such person is Peter Frick, who joined Hoval at the age of 20 after completing his tool-making apprenticeship. Now, 60 years later, he looks back proudly, yet modestly, at his life's work. This skilled businessman, now 80 years old, held the positions of Managing Director and Chair of the Board of Directors at the Hoval Group for almost 33 years. He is set apart by the way he moves through life with open eyes and ears, and always with people in mind – whether they are customers, colleagues or partners – and the way he draws strength from tranquility and the mountains. He retired in the autumn of 2021.

Mr Frick, following your tool-making apprenticeship, you decided to study heating and ventilation engineering.

What was it about this professional field that fascinated you at such a young age?

Peter Frick: I always wanted to study. After my apprenticeship, the only option was a technical degree. Heating was a new field of study at the time, and it caught my interest. In particular, studying enabled me to become independent and carve my own path. That was important to me from a young age.

After completing your studies, you married your Antonia, the second-eldest daughter of Hoval founder Gustav Ospelt. Shortly afterwards, you were given the opportunity to go to the Hoval plant in England to switch it over to the new hot water boiler technology. What are your most vivid memories of that time?

Peter Frick: My team in England consisted of proud steam boiler welders, who were open-minded and saw their future in the new hot water boilers. I was impressed by the way they took my advice on board, even though they were many years older than me. We were all on first-name terms and

remained very close for many years afterwards. So when I look back now on my early days at Hoval, those people are very strong in my memory.

In 1968, after returning from England, you became Managing Director of Hovalwerk AG in Vaduz. Then in 1973, you joined Hoval Holding AG as a member of the Board of Directors. What factors influenced your business activities over the decades?

Peter Frick: You know, the success of a company never comes down to just one person; in order to succeed, you always need a team of good colleagues behind you. Your task, as a manager, is to lead these colleagues, to keep them united and to challenge them, without overwhelming them. And that can only be achieved through good relationships. You should always be able to talk to one another and share the conviction that you're doing the right thing.

Looking back on your 60 years at Hoval, what do you think were the major milestones in the company's history?

Peter Frick: There were plenty of milestones. For example, when we switched from solid fuels to oil, which involved us having to reorganise the products. Or later, when we switched from oil to gas, when forest dieback was a major issue. That's what pushed us to develop a gas burner that reduces nitrogen oxide. Our UltraGas still ranks among the leading gas condensing boilers on the market today. Some other milestones were definitely our first steps into heat recovery technology, the development of our own control systems and our early internationalisation. We entered the American market as early as 1975.

Hoval is still an independent family company. What do you think is the biggest strength of family-run companies?

Peter Frick: Family companies think ahead more than listed companies. There is a sense of continuity carried forward by the family and its culture. And from an employee standpoint, family companies make stable and reliable employers.

"The customer is king" is a motto that many companies live by. Customer focus has always been a priority for you. What factors in particular were important to you?

Peter Frick: That's right, customer service was and remains central at Hoval. In that regard, it is important to recognise what customer satisfaction really means for your customers. In order to find that out, you need to work closely with people.

“I always believed in my people, always believed in the company – and ultimately, I always believed in myself.”

Peter Frick

How important is it for business owners to cultivate a visionary mindset?

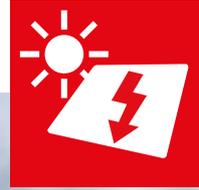
Peter Frick: It's not about vision. It's about knowing where you want to go and pursuing a strategy. You need to keep your eyes and ears open and have a feel for the market. We've always kept a close eye on the market and technology and planned our actions accordingly. There have been times when we were too early with our developments because the market wasn't ready for them yet – for example, with our heat pump. But we've never missed out on anything.

In the autumn of 2021, you embarked on your well-earned retirement after 60 years at Hoval. What are you most looking forward to now?

Peter Frick: The challenge we're currently facing is the switch from fossil fuels to sustainable energy. I'm particularly looking forward to visiting our new heat pump plant. In my private life, I'll be going skiing in the mountains, though some people are already advising me to slow down a bit (laughs). After all, I have always found the peace and strength I needed for my work in the mountains, as well as in my family – especially my wonderful wife, who has always supported me.

When you look back at your life's work now, what makes you feel especially proud?

Peter Frick: Nowadays, Hoval works in areas of business that are helping to combat climate change. That's something I'm proud of.



Smart energy management

With the EnergyManager PV smart, Hoval has perfected the combination of heat pump and PV system in a wonderfully innovative way, without any additional hardware, interfaces or extra costs. This system boosts solar self-consumption by up to 10%.

A highly efficient heat pump combined with a photovoltaic system on the roof: this is what many people would consider to be the ideal solution for their home. And rightly so, since there's no cheaper or more ecological way to operate heat pumps than with self-generated solar power.

There's just one catch: PV systems only supply sufficient power during the day and only when the sun is shining. Unless you want to simply feed excess power into the grid, you need a buffer.

Storage for power from PV systems

However, battery storage devices for solar power are relatively cost-intensive and often take a long time to pay for themselves. In some countries, government subsidies ensure that customers do not bear the brunt of the costs. Nevertheless, the life cycle assessments for many rechargeable batteries still yield mixed results.

It is therefore all the more exciting that Hoval's control system development team has launched a storage method via a purely software-based solution.

“The EnergyManager PV smart demonstrates how the innovative digital approaches used in Hoval solutions are creating whole new ways of managing energy,” explains Ernst Sattler, Product Manager Controls at the Hoval Group.

The Hoval EnergyManager PV smart obtains online weather data for the location of the heat pump and photovoltaic system and ensures that the self-produced power is used when there is enough of it available. All this solution requires is a Hoval heat pump with HovalConnect. Any photovoltaic system can be integrated, regardless of manufacturer.

The Hoval EnergyManager PV smart then stores the excess energy from the photovoltaic system where it is ultimately needed: in the building itself, in the form of heating energy for rooms and hot water.

Increasing self-consumption rates at no extra cost

Peter Schatte, Head of Product Management Controls at the Hoval Group, explains how the EnergyManager optimises our customers' rate of self-consumption:

“In principle, a heat pump can be controlled very effectively by electricity. By adjusting the heating operation to the times when there is excess power from the PV system, we can improve the rate of self-consumption.”

Although the heat load of a heat pump and the power generated by a PV system demonstrate inverse correlation over the course of the year, there are still plenty of days with potential for optimisation, depending on the weather – especially in spring and autumn.

However, conventional energy management systems are very cost-intensive. In addition to the hardware costs, they also involve cabling, extra components and installation work.

“We calculated that, on average, it takes a full 17 years for a traditional energy management system to pay for itself. So we asked ourselves whether there could be a smarter solution,” says Peter Schatte, explaining the fundamental idea behind this digital solution from Hoval.

“The EnergyManager PV smart is a free feature of HovalConnect that starts paying for itself from the very first day. Because it uses online weather data, it doesn't require any hardware interfaces and it is compatible with any PV system. It is also very straightforward to commission and to operate.”

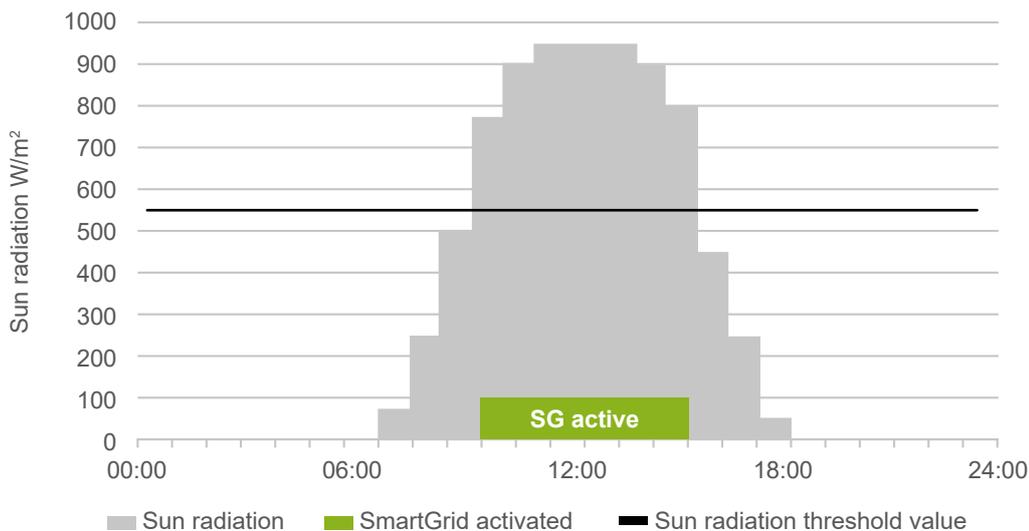
During commissioning, a threshold level is set for sun radiation. The homeowner can easily adjust this threshold level later via the app.



“The EnergyManager PV smart demonstrates how the innovative digital approaches used in Hoval solutions are creating whole new ways of managing energy.”

Ernst Sattler
Product Manager Controls
Hoval Group





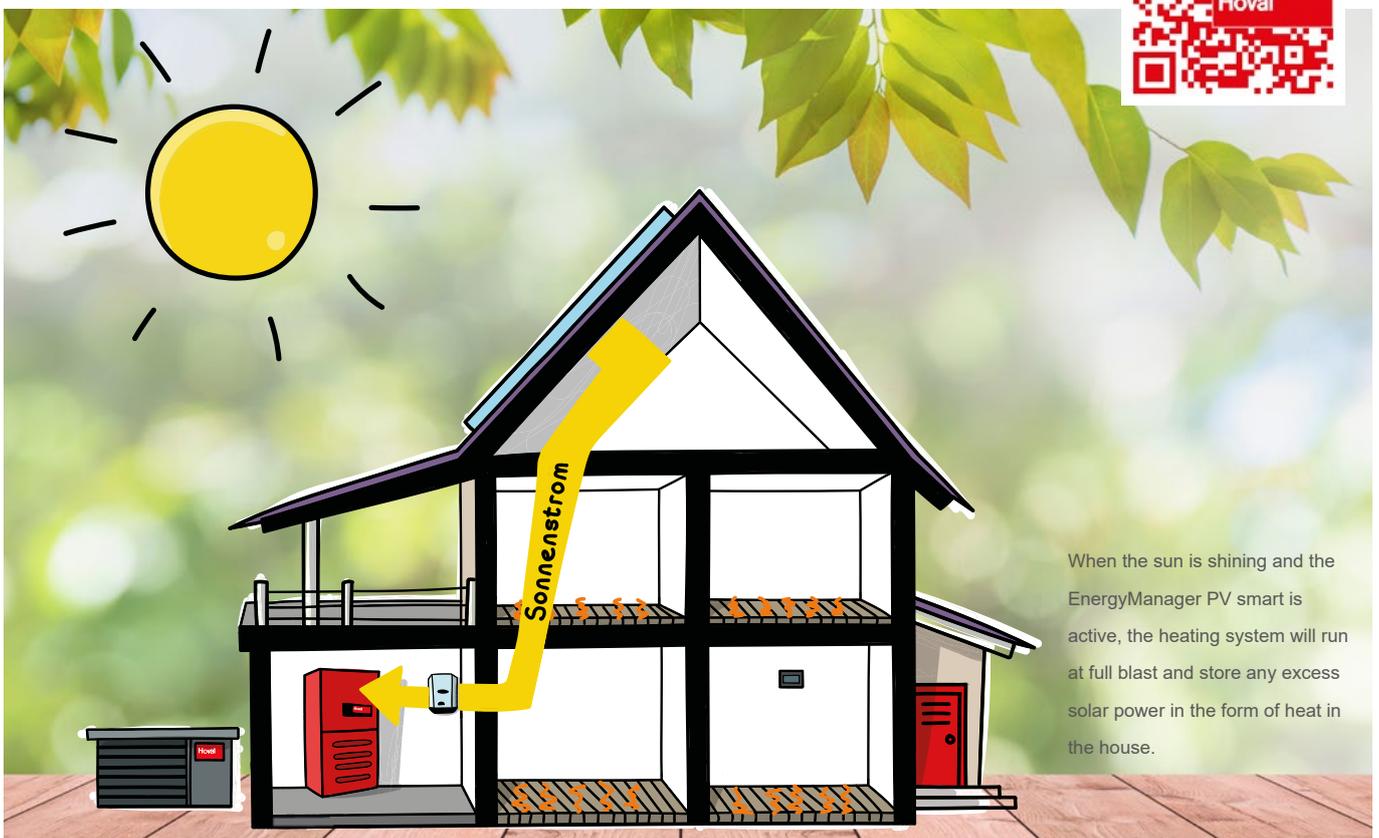
The centrepiece of the Energy-Manager PV smart system: the SmartGrid function integrated in the unit. This user-friendly feature can be operated conveniently via the HovalConnect app or the room control module.

No hardware or installation required

When the level of sun radiation exceeds the set threshold value, the SmartGrid function in the heat pump activates the heating mode. The heat pump stores the excess PV power by increasing the temperature in the domestic hot water and buffer storage tank, which it achieves by slightly increasing the space heating in the building. In summer, excess power can also be stored in the house as cooling energy. This simple and convenient method boosts PV power self-consumption by up to 10%.

For households looking to save even more, Hoval is developing the EnergyManager PV pro. With its stepless control of modulating heat pumps, precise energy flow monitoring and other features, this system will make it possible to boost self-consumption by up to 15%. Those are sunny prospects for Hoval's heat pump and PV system team.

Find out more about the smart energy management system in this video:



When the sun is shining and the EnergyManager PV smart is active, the heating system will run at full blast and store any excess solar power in the form of heat in the house.

Indoor climate systems for logistics halls



When it comes to designing heating, ventilation and air conditioning (HVAC) systems for logistics halls, the basic principles of flow mechanics always apply – regardless of the specific requirements for hall temperature. These principles affect the planning, installation and ultimately the costs (operational and otherwise) of the ventilation technology.



For example, it is important to aim for a vertical temperature gradient that will minimise heat loss by keeping temperature rises as low as possible, especially in the upper hall area. One way of achieving this is to maintain a good level of air circulation down the aisles. The flow conditions can be optimised by, for example, using permeable gridded shelving systems with a generous gap between them and the floor.

Advantages of torsion air distributors

The specific flow properties of torsion air distributors - such as Hoval's patented Air-Injector - ensure that the air inside logistics halls is distributed exactly as required.

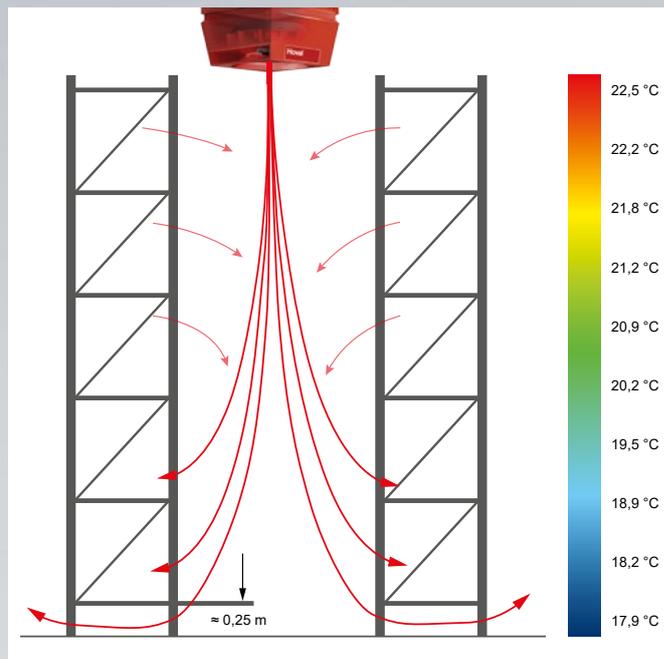
In heating mode, a highly concentrated air stream is emitted from the distributor at high speed and a negative pressure difference occurs around the air column (Bernoulli distribution). As a result, the ambient air moves from the ceiling area and, to a lesser extent, from the top shelves towards the air stream. As the depth of penetration increases, the air stream slows down, the surrounding negative pressure decreases and the ambient air is induced. The flow then reaches the lower shelves.

In order for the flow to pass efficiently to the neighbouring shelves, there should be a space of 0.2 to 0.3 m between the floor and the shelving. This improves the air distribution, which in turn makes it possible to optimise the flow of up to three aisles with a series of air passages (see image on page 13).

Rows of shelves restrict the rotationally symmetrical flow of torsion air distributors. The fronts of the rows of shelves act, in terms of air flow, as walls, causing wall jets to form (Coanda effect). These have a wider reach than open jets (Regenscheit's Formulation) and a greater mounting height than with free flow distribution. This increase can be up to 1.5 m.

Meeting specific temperature requirements

If the stored goods do not have any specific temperature requirements, the ideal room temperature is generally between a frost-free temperature and 16°C. A temperature of around 8°C may be considered to be frost-free when using water-controlled, glycol-free systems and a switching temperature of 5°C on the frost stat. The individual ventilation units are then operated with the heat output resulting from the maximum possible temperature difference at the fixed mounting height and flow rate. An on-off control system is all it takes to maintain a frost-free room temperature and only a few units need to be installed.



Air flow through aisles: with the air supplied vertically from above, low temperature gradients can be achieved across the whole height. In a hall with a height of between 8 and 20 m, the values will typically fall between 0.15 and 0.25 K.

Maximum permissible temperatures (upper temperature limit)...

...which apply, for instance, when storing food or pharmaceutical products, are usually under 25°C. When supplying air directly to the top shelves, the supply air temperature cannot exceed the upper temperature limit in heating mode. This only allows for a very small temperature range and in turn a low heat output, meaning that a relatively large number of ventilation units will need to be installed if the temperature is to be maintained.

This is where torsion air distributors come in, as they boost the temperature range and heat output. In heating mode, the air flow is strongly concentrated and there is no need to supply air directly to the top shelves. Consequently, the supply air can be blown in at a temperature of around 3 Kelvin (K) higher than the required upper limit temperature. The required heat output can then be achieved with fewer units, which cuts down on the initial investment and ongoing operating costs - and, of course, it's good news for the environment too.

During the summer months, the set temperature limits can be maintained using recirculated or outdoor air units. Air from the outside can be used for direct and/or indirect cooling. In order to strictly comply with these temperature limits, automated system control is highly recommended.

If there are lower and upper temperature limits that need to be adhered to, the vertical temperature gradient is crucial. If, for example, goods need to be stored between 18°C and 21°C (3 K), the height of the hall must not exceed 12 m with a gradient of 0.25 K/m.

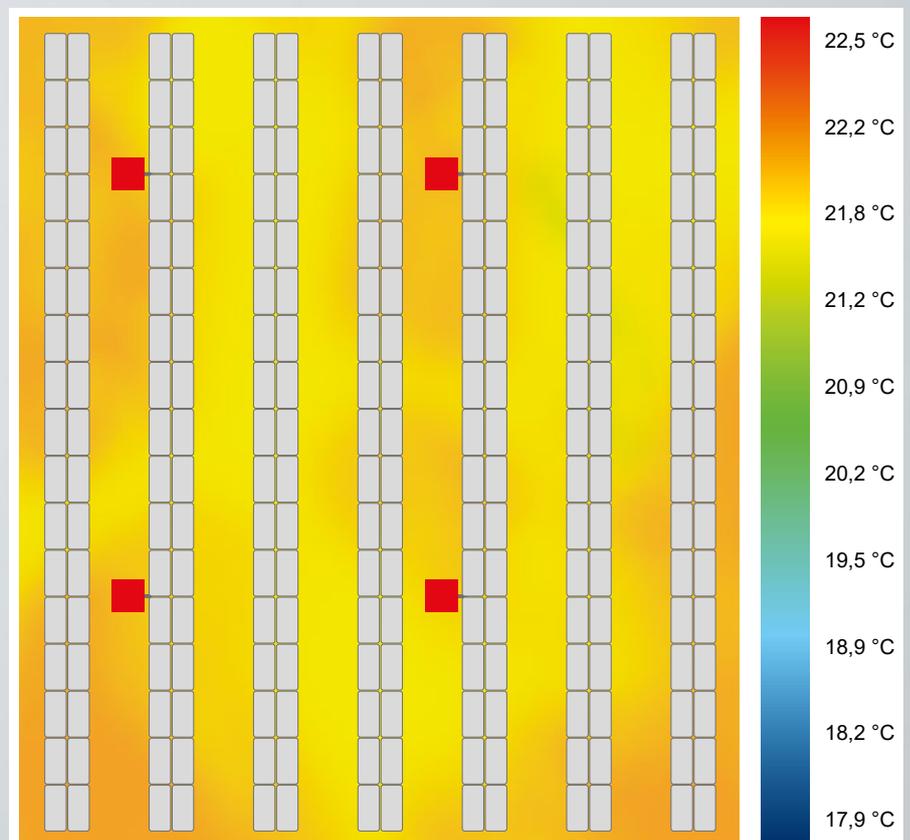
Supply air and pollutant concentration

If diesel forklift trucks are used in a hall, additional country-specific technical regulations are binding. To avoid exceeding permissible pollutant concentrations, the supply air flow must be adjusted accordingly, if necessary.



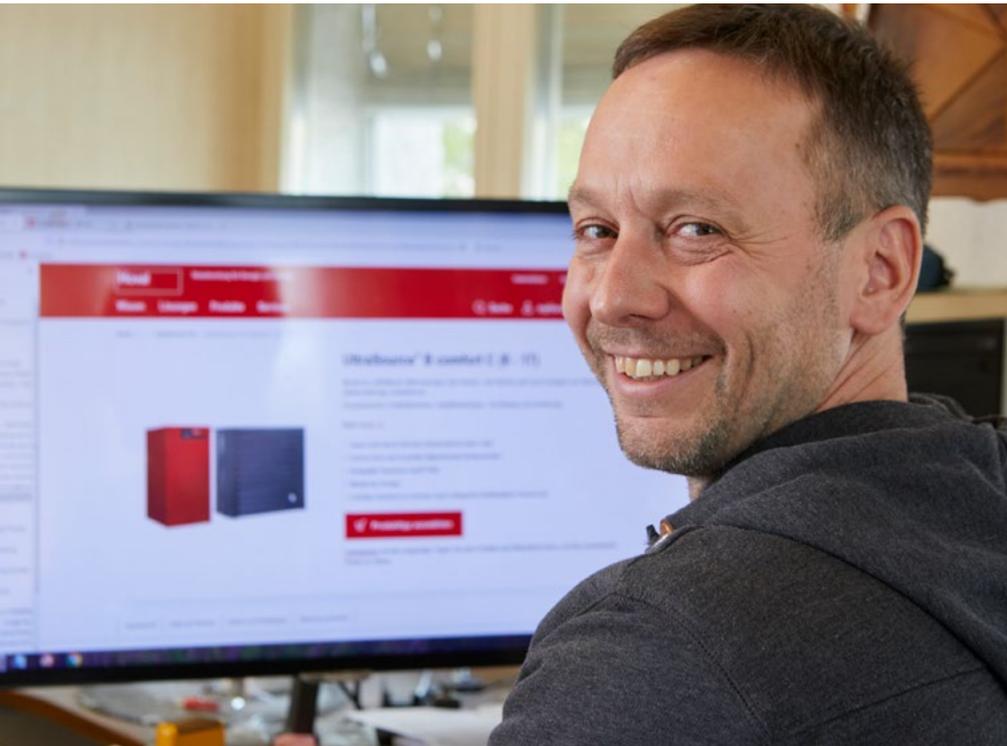
Modern electric forklift trucks are powered by lithium-ion batteries. No hydrogen is released when they are being charged, which puts them at an advantage over standard lead-acid batteries. This also means that their charging stations don't need to comply with the ATEX Directive for explosion protection and prevention and no further ventilation measures need to be taken. If there are shelf conveying systems in use, the heat released by the systems needs to be taken into account when calculating the cooling load.

This diagram demonstrates how the temperatures are distributed among the rows of shelves (grey boxes). Due to the optimal air distribution achieved by the Hoval TopVent® units (red boxes), they only need to be installed in every third aisle.





E-commerce tailored to our customers' needs



Right from the beginning, Marcel Nater was able to help design Hoval's e-commerce shop myHoval from a customer's perspective.

Hoval's e-commerce platform myHoval was developed in line with the preferences of all those who work with it. Specialists such as Marcel Nater from Hauptwil (Switzerland) have been involved from the beginning and often initiate practical solutions.

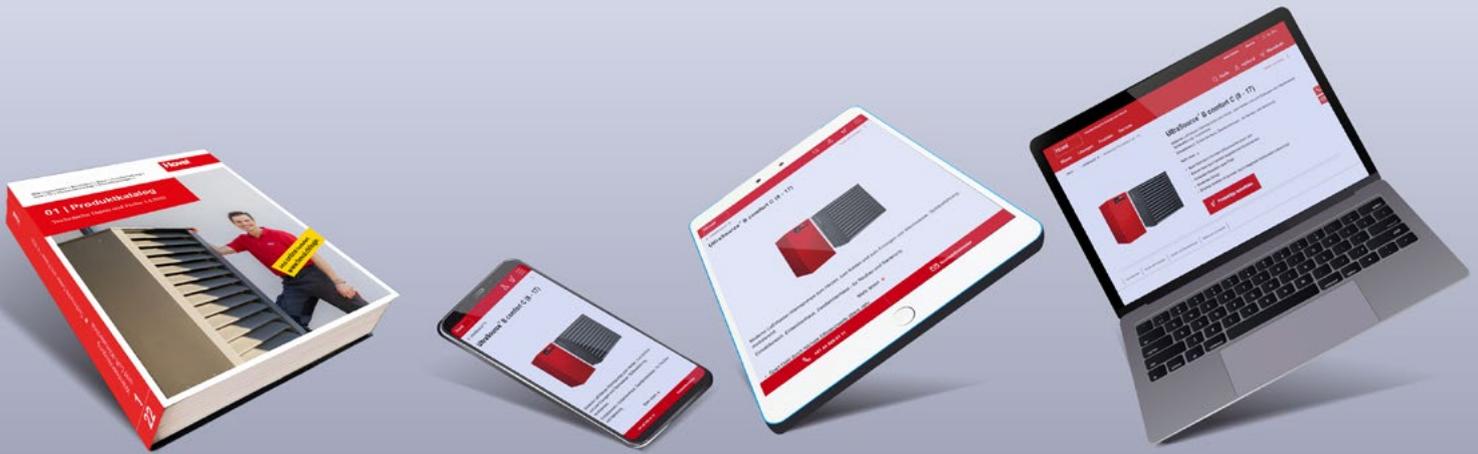
Marcel Nater is a frequent user of the Hoval online shop and its additional features. After all, he has more than enough on his plate. "We get plenty of orders. The only thing we're missing is one or two assembly specialists. But there's no need for us to expand. It's important that we still have enough time for our families and hobbies too." The family photos and children's drawings on the walls bear witness to the overriding sense of family in this family business.

A family business in a digital age

"Gebrüder Nater" was founded by the father and uncle of the current owners. Today, brothers Michael and Marcel Nater run the specialist building technology company in its second generation, in an age of digital transformation.

"The Hoval online shop has changed the way I work. But I've also had the opportunity to help design the shop's features," says Marcel Nater, explaining his understanding of how e-commerce should work. "From the outset, Hoval was very interested in taking into account the views of all those who work with the shop on a daily basis."

Iliyan Pavlov, Head of Sales Operations and E-Business at Hoval, nods in agreement: "That's right, of course we want to develop our shop in line with our customers' needs. So we always welcome any suggestions or feedback." >>



From printed catalogue to online shop

In the past, Marcel Nater was used to the printed catalogue as his primary working document – as were many industry experts. “That’s why, in the beginning, it was important to me to ensure that the catalogue was my starting point online as well. Hoval quickly implemented that request. Today, the e-commerce section in myHoval is an indispensable tool in the office and on the road. When I’m on site with a customer to evaluate a possible installation, I simply use the dimensioned sketches on my smartphone. I don’t need to take anything else with me when I’m on the go.”

Back at the office, Marcel Nater then creates his quotes online in the e-shop. He puts together two or three comprehensive quotes directly from the e-shop and, from there, he forwards them to the customer. As he explains his method, he keeps adding little comments and suggestions for how the system could be improved further.



“A software professional would develop an online shop very differently from someone like me, who actually has to use it every day.”

Marcel Nater
Gebrüder Nater Betriebs AG



“That’s exactly why we reach out to customers like you and incorporate your suggestions and preferences. That is our top priority at Hoval.”

Iliyan Pavlov
Head of Sales Operations
and E-Business, Hoval Group



Marcel Nater and Iliyan Pavlov discuss new developments in the shop.

Developed with clients, for clients

Iliyan Pavlov listens attentively and before long he is sliding his laptop across the heavy wooden table in the Gebrüder Nater conference room. “Are you familiar with this feature?” The two of them discuss various possibilities for assembling systems, presenting quotes, approving orders and forwarding information to customers.

“During the lockdowns,” Iliyan Pavlov explains in between, “we integrated this option to quickly hide individual rates from the screen, making it easier to share quotes with developers during video conferences.”

What advice would he give to somebody who wants to switch from traditional quotation and ordering systems to e-commerce with Hoval?

“Just talk to Hoval, you’ll get proper training and plenty of support. Besides, you can’t really go that wrong. At Hoval, everything is checked again for plausibility. And if you ever actually make a mistake in an order, you can cancel it.”

Advantages of the Hoval online shop for specialist customers:

- The myHoval shop is open 24/7
- Straightforward account activation process for existing customers
- Continuously updated catalogues, with products, hydraulic schematics, spare parts and prices
- Product availability updated in real time
- Hoval basket templates based on hydraulic schematics for simple and accurate ordering
- Transaction history and documents – quotes, orders, invoices, bookmarked documents and content
- Simple account and user management
- Interfaces to third-party software, incl. basket import and export
- Delivery tracking

A large, dynamic splash of clear water dominates the left and bottom portions of the page. The water is captured in mid-air, creating intricate patterns of droplets and flowing streams. The background is a clean, light grey, which makes the blue and white tones of the water stand out. The overall composition is clean and modern, emphasizing the theme of water and energy efficiency.

Domestic hot water with a system

TransTherm aqua LS can do much more than just heat your bathwater. For example, with its low return temperature, this patented hot water system also improves the condensing effect in the UltraGas® family.

If you're considering an investment, the first thing you'll think of when it comes to saving energy is heating and thermal insulation. In a well-insulated building, the required output for domestic hot water is often higher than for room heating. Due to improved thermal insulation and favourable building design – for example, larger windows for more sunlight – heating requirements have, fortunately, reduced in recent decades.

50 litres per person per day

However, we are not showering, bathing or grooming any less than we used to. Demand for hot water has remained roughly the same for 50 years: an average of 50 l of domestic hot water per person per day. In a four-person household, that's around 75000 l per year.

It is therefore all the more important to choose the right water heating system. A building's hot water system is just as important for its energy balance as its heating system. Naturally, the most efficient option is a complete solution that is designed as a system.

One key component of this modular system is the TransTherm aqua LS, which is designed for hygienic and energy-efficient domestic water heating with two heat exchangers using the buffer storage principle.



Pre-assembled station with two plate heat exchangers for the provision of domestic hot water using the buffer storage principle.

A patented solution

This patented design optimally meets both the high efficiency standards of our modern times and the legal requirements for domestic water hygiene.

The TransTherm aqua LS is suitable for district heating systems and condensing boilers, as well as heat pump and solar thermal systems, and meets the requirements of a low-exergy system.

This domestic water heating solution is based on a two-stage cascade buffer storage system. When it comes to heating water, this results in very low return temperatures with a very low and practically constant heating water flow rate, which has a significant impact on the system efficiency.

Return cooling occurs in the preheater during the storage tank charging process. As soon as the domestic water storage tank has reached a set charge level, the storage tank charging pump is adjusted in accordance with the charging circuit return temperature.

The continuous heating of the circulation flow and the hydraulic integration of the heated domestic water in the upper part of the domestic water storage tank enables thermal stratification to occur undisturbed in the storage tank.

The TopTronic® E control module also contributes towards safe operation in accordance with the German Drinking Water Ordinance and the guidelines issued by the DVGW (German Technical and Scientific Association for Gas and Water).



A system solution with plenty of advantages

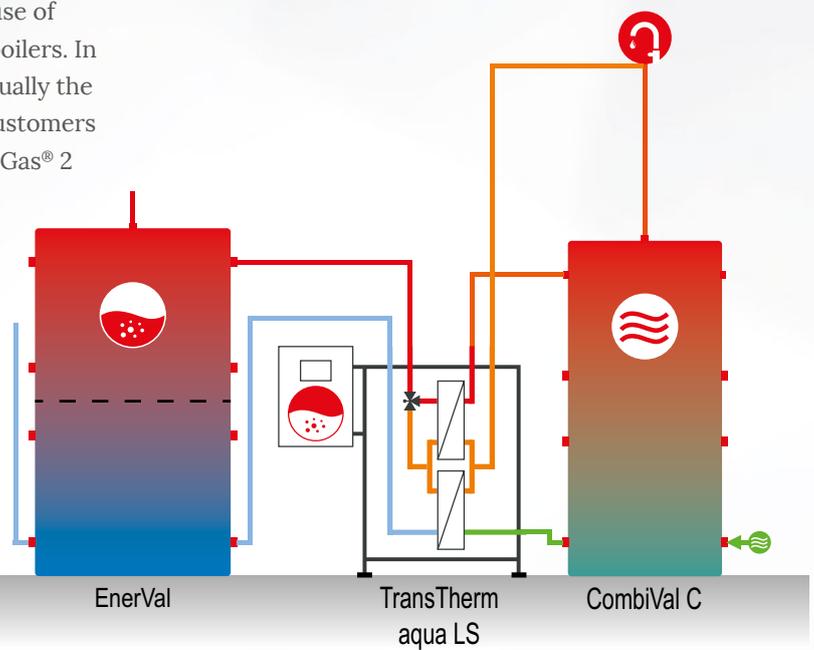
In addition, the TransTherm aqua LS has a range of advantages to offer. The domestic water heating process does not cause any pressure fluctuations in the domestic water supply network, regardless of tapping capacity. Even at a high tapping capacity, the flow rate in the primary system only changes very slightly. Due to the system design, the high flow temperatures in the primary system result in low return temperatures. And the buffering domestic water storage tank allows for a slow adjustment of buffer storage temperatures, which in turn leads to minimal fluctuations in buffer storage temperature and reduces the likelihood of calcification because there are fewer peaks in temperature.

The low return temperature of the domestic hot water also means that heat energy is supplied to the building more efficiently, thus helping to save CO₂. When combined with a TransShare heat distribution system, the TransTherm aqua LS domestic water system helps to make optimal use of the condensing effect in modern gas condensing boilers. In this respect, the topic of domestic hot water is actually the perfect starting point when it comes to advising customers on energy-efficient heating with Hoval's new UltraGas® 2 condensing boiler.

Buffer storage solutions in conjunction with two charging heat exchangers. Low return temperatures in the heating water when charging due to two-stage heat exchanger circuit. Ideal for connecting to condensing boilers, solar-thermal systems, district heating networks.

TransTherm aqua LS

is a pre-assembled buffer storage solution with two heat exchangers for hygienic water heating using the buffer storage principle. The heat exchanger output and storage tank capacity are custom-designed, which means the system can be adapted to the building's tapping characteristics in the most effective way possible. The second heat exchanger ensures constantly low return temperatures, making it especially suitable for use with condensing boiler technology, for heating networks and for solar plants.

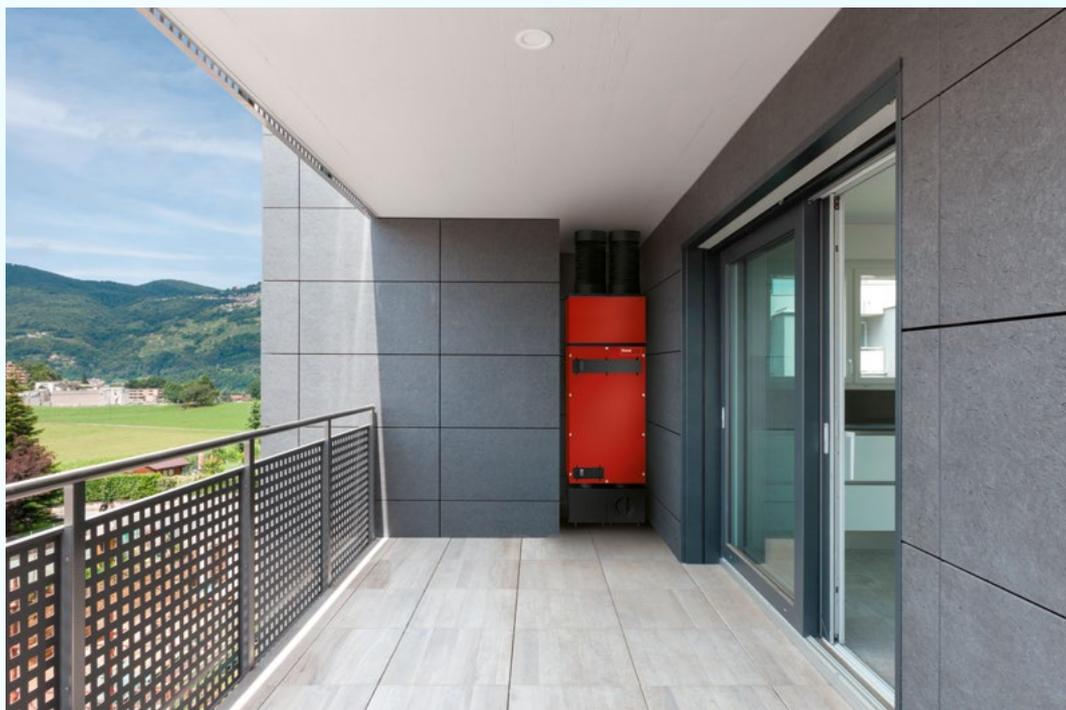


Breathing freely, made easy



The new Hoval HomeVent® ER comfort ventilation unit supplies up to 400 m³/h of fresh air and is easy to install due to the Isi system. It comes with a wide range of benefits, meaning that anyone who decides to get a residential ventilation system installed – or anyone involved in installing one – can breathe easy.





There are a range of flexible options available when it comes to installing the HomeVent® comfort ventilation units. For example, they can even be installed outdoors on a balcony.

In the past, only specialists would discuss things like aerosols and air quality in living spaces. Today, due to the Covid-19 pandemic, these are issues that the entire public is probably aware of.

The revamped and improved HomeVent® system has therefore come at just the right time to bring industry specialists a simple yet attractive additional source of business. After all, for some years now, ever-tighter building envelopes have meant that demand for controlled ventilation is constantly on the rise.

A tried-and-tested system, made even better

What improvements has Hoval made to its tried-and-tested HomeVent® system?

- The air flow rate has now been increased to up to 400 m³/h, making HomeVent® the top choice even for larger residential complexes, schools or office blocks.
- The sound levels and efficiency have been optimised. Due to its energy recovery rate, which is unrivalled on the market, HomeVent® saves 15 times more energy than it consumes. It's an absolute win-win situation in terms of comfort and energy savings.
- With new types of fans, more robust rotor bearings, standardised connection nozzles, lockable filter caps and standardised Isi system accessories, HomeVent® is ready to meet the requirements of tomorrow.

Easy to install due to the Isi system

Two particular advantages quickly become apparent during installation: firstly, the units are just as compact as ever with the same output, saving valuable space. Secondly, with the integrated Isi system, the task of installing the units is quicker and easier than ever before, which is a major advantage in these times of skilled worker shortages.

The screwless Isi system combines EPP piping, insulation and an installation part in one system. This eliminates the need to painstakingly cut out round pipes from sheet metal. There is no need for additional insulation. And problems with condensation are a thing of the past too. The installation process is just as easy as the name suggests, but the result is always perfect, both technically and visually. And that's regardless of whether the unit is installed inside or outside the building envelope.

With HomeVent® from Hoval, the professional community is offering interested audiences an impressive complete solution. Heating, hot water and a residential ventilation system from one source, all integrated in the same control system – and the Hoval service team is always on hand to help if required.

An investment in quality of life and building protection

For developers and building owners, HomeVent® is a highly useful investment in building protection. The permanent humidity control ensures value retention in high-quality properties – regardless of the behaviour of all those using the building – and there is also increasing demand for it in social housing.

Anyone living in a flat or house with HomeVent® certainly wouldn't want to do without it.

Having access to fresh air with the right level of air humidity in every living space, automatically and at all times, simply improves residents' health and quality of life. HomeVent® automatically and continuously supplies fresh and clean air to rooms before they get stuffy. At night while you sleep, in the morning in the bathroom, during the day when you'd rather not open the window because of noise pollution and every moment in between.



The Isi system: rapid installation including thermal and sound insulation

It all just fits together. The Hoval ventilation unit is connected directly to the sophisticated Isi system, which is made up of EPP pipes. The components come with both thermal and sound insulation, for simple and safe installation.

The Isi system comprises:

- IsiSound: thermally insulated silencers made of special sound-absorbing material that is resistant to humidity
- IsiCube: flexible connection cube for installation in confined spaces
- IsiFlex: flexible, sound-insulated hose for complex installation challenges



Find out more about the Isi system in this video:

Hoval is the Architects' Darling

Every year, Swiss architects honour their favourite players in the construction sector in the national "Architects' Darling" industry survey. Hoval Switzerland took first place in the award category "Building Technology: Heating, Ventilation and Cooling". The decisive factors in this result were the strong ratings received in the areas of "Product quality", "Technical support" and "Value for money".



Celebrating their first-place ranking in the “Building Technology” category: Daniel Weltin, Managing Director of Hoval Switzerland, and Nicole Küng, Head of Sales and Marketing at Hoval Switzerland.



Every year, specialists from the fields of architecture, design and construction honour their favourite companies with the Architects’ Darling award, voting across more than 15 categories. The open voting process, which is organised by specialist publication Schweizer Baudokumentation, thus provides a professional record of which industry players are particularly valued in the construction sector. In this industry survey, Hoval Switzerland was awarded first place in the “Building Technology: Heating, Ventilation and Cooling” category, beating its competitors in the heating and climate technology sector.

“This Gold Award for Hoval confirms not only the high level of trust that we enjoy among the respondents,” says Nicole Küng, Head of Sales and Marketing at Hoval Switzerland, “but also that our approach of working the Swiss market in close collaboration with our specialist clientele is bearing fruit. So we’d like to say a big thank you to everybody who voted to give us this highly motivating award!”

The clincher: quality, support and cost efficiency

From June to August 2021, more than 400 people rated the nominated industry players in over 15 categories, including “Building technology”, “Fire protection” and “Facades”. Hoval Switzerland achieved first place in the relevant “Building Technology” category, since the company received the best scores in the three voting areas “Product quality”, “Technical support” and “Value for money” – with a clear lead over the competition. In the other two voting areas, “Innovation” and “Healthy living environment”, Hoval claimed second place.



“This Gold Award for Hoval confirms not only the high level of trust that we enjoy among the respondents, but also that our approach of working the Swiss market in close collaboration with our specialist clientele is bearing fruit.”

Nicole Küng,
Head of Sales and Marketing
Hoval Switzerland

Top air quality for production halls

Food and drink manufacturer Spitz, based in Upper Austria, built a new production hall for can filling. This hall, measuring 10 metres high, is supplied with fresh air via an indoor climate solution from Hoval. The integrated dehumidification control ensures hygienic conditions, while the high-output plate heat exchangers achieve heat recovery efficiency of up to 86%.

An indoor climate solution from Hoval supplies fresh air in Spitz's new 10-metre-high production hall.

Different companies worked side by side to complete the indoor climate solution project at Spitz.



S. Spitz GmbH has been producing foodstuffs and beverages in the town of Attnang-Puchheim for over 160 years. Since October 2020, the Upper Austrian company has been operating an additional canning line, which is housed in a new 4250 m² production hall and has a nominal output of 87000 cans per hour.

“During the canning process, moisture and heat are released into the air, for example by cleaning systems or the tunnel pasteuriser,” says Markus Kröpfel, Head of Central Technology at Spitz, explaining the background of the project: “Our indoor climate solution needs to ensure fresh air intake in the enclosed hall, while also meeting the specific hygiene requirements for food production.” Kröpfel also mentions other criteria, such as simple system maintenance and the possibility of heat recovery. That’s why Spitz opted for a decentralised indoor climate solution from Hoval, consisting of six RoofVent® units for ventilation as well as three TopVent® recirculation units.

Fresh air intake in a 10-metre-high hall

Ensuring an adequate supply of fresh air in this 10-metre-high hall is a particular challenge, because the doors and skylights are closed. By taking in air from outside, the indoor climate solution from Hoval always guarantees fresh air, while also meeting all hygiene requirements. For one thing, the separate routing in the plate heat exchanger sends the extract air directly outside, preventing it from mixing with the supply air. For another, the technology does not require any hard-to-clean air ducts: “We preferred a decentralised solution because we didn’t want to install any air ducts in the hall – for two reasons: firstly, this approach reduces the level of structural complexity, and secondly, it is a better option in terms of hygiene,” explains Kröpfel.

Up to 86% heat recovery

The solution installed at the Spitz facility not only meets the required hygiene standards in the production hall, it also ensures efficient operation through heat recovery. “The RoofVent® units are fitted with a high-output plate heat exchanger, which ensures heat recovery efficiency of up to 86%,” explains Christoph Steinhäusler, Head of Product Market Management for Climate Technology at Hoval. Spitz also relies on its own bio district heating network for heat generation.

Hygienic conditions due to dehumidification control

The indoor climate system is equipped with the options required to keep the indoor air humidity at a perfectly hygienic level. These options include, in addition to the corrosion-resistant coating and additional condensate drains, the energy-optimised dehumidification control which is integrated in the TopTronic® C control system and was developed by Hoval. “When the system is running at full capacity, it can remove up to 400 l of water from the air per hour. This enables us to achieve the required air quality in the production hall, while also keeping our energy consumption low,” says Steinhäusler.



The energy-optimised dehumidification control system guarantees the required air quality in the Spitz production hall.

Connected and cooperative

All of the companies involved in the indoor climate solution project for Spitz worked side by side. The overall technical planning and engineering was overseen by Dr. Shebl & Partner Generalplaner GmbH, while the solution was implemented by Hoval’s partner installation company Waser. “The system was installed perfectly, without any major effort on our part, and it was optimally adjusted by the Hoval customer service team,” says Kröpfel, evidently satisfied with the process.

Four buildings, one heating system

As part of its recent heating system renovation, the town of Kaufbeuren decided to connect four buildings via a local heating network. By combining gas heating, heat pumps and a CHP plant, the town will now save around 225 t of CO₂ per year in future.



Stephan Pawelke, Building Systems Engineer for the town of Kaufbeuren, and Robert Peschke, Sales Representative at Hoval Germany, in Kaufbeuren's new heating centre.



As part of a CO₂-saving programme initiated by the European Regional Development Fund (ERDF), the town of Kaufbeuren decided to renovate and expand its existing local heating network to heat four public buildings. This network already connected three schools. Now, the town wanted to add an administrative building, which also houses a youth centre and a library. “The existing oil and gas heating systems were aging and running inefficiently. When it came to renovating these systems, it was really important to us to ensure that the new heating centre would be economical, robust, durable and, above all, sustainable. The system solution we had installed meets these requirements very effectively,” says Stephan Pawelke, who is responsible for building technology in the town of Kaufbeuren, explaining the project requirements. In collaboration with the engineering firm responsible for the planning, managed by Mathias Baumann, Hoval implemented a solution consisting of an UltraGas® gas condensing boiler, three Thermalia® heat pumps and a combined heat and power plant (CHP plant). These systems have been supplying the 6500 m² space with heat since autumn 2020. A gymnasium, still in the planning phase, will also be added in future, expanding the area by another 1500 m². With this heating centre, which is both efficient

and sustainable, Kaufbeuren has halved its energy consumption in these buildings and will now also save around 225 t of CO₂ per year.

A 290-metre local heating network

The new heating system was installed in the vaulted cellar of one of the historic school buildings, which dates back to 1873. The administrative building, constructed more recently in the 1960s, was renovated beforehand to improve energy efficiency; this involved replacing the windows and insulating the roof and facade. “Since the buildings are located on different plots of land, one challenge of the project was to connect all units via heat pipes as effectively as possible, without losing any energy. The civil engineering work that was carried out to lay the pipelines worked perfectly,” emphasises engineer Mathias Baumann. In total, the local heating network comprises 290 metres of insulated underground pipelines that had to be relaid.



There were already three schools in the town of Kaufbeuren that were connected via a local heating network. This network was then expanded to include an administrative building, which is also home to a youth centre and a library.

“When it came to renovating these systems, it was really important to us to ensure that the new heating centre would be economical, robust, durable and, above all, sustainable. The system solution we had installed meets these requirements very effectively.”

Stephan Pawelke
Building Systems Engineer
for the town of Kaufbeuren



Low temperature for improved efficiency

In order to increase the efficiency of the heating systems, the entire system was switched to a low temperature. “The flow temperature of the heating systems now falls between 35 and 50°C. This makes the heating centre both more ecological and more cost-effective to operate,” says Mathias Baumann, outlining the advantages of the system. The CHP plant and the three air/water heat pumps carry the base load of the energy supply for all four buildings. The gas

condensing boiler covers peak consumption and will be used for water heating in the gymnasium. The use of high- and low-temperature return technology guarantees a high level of efficiency through condensation. The heating centre also opens up new possibilities for the future. “The current system could also be used to supply the new gymnasium and additional classrooms,” says Stephan Pawelke, highlighting the future viability of the system.



The new heating centre consists of an UltraGas® gas condensing boiler, three Thermalia® heat pumps and one combined heat and power plant (CHP plant).



Every building has access to the heating centre

Another focus of the project was the integration of all units of the heating centre into the building control system, also newly built. One key priority here was to visualise and optimise all the individual components. In this respect, Hoval offers a crucial advantage by integrating its remote maintenance technology. For example, the schools need to actively reduce heat output more often due to their regular holidays. “With this comprehensive control system, the building management specialists have an overview of the heat supply at all times and are able to intervene directly on site,” says Mr Pawelke.

A system solution from a single source

Even during the planning stage, all parties involved agreed it was important to ensure that all elements of the solution came from a single source. In Mathias Baumann and Hoval, the town of Kaufbeuren found two highly capable and decisive partners. “The companies involved worked together perfectly – they implemented the project competently and reliably. It couldn’t have gone any better,” emphasises Stephan Pawelke, adding: “Even now, after the final commissioning stage, I know that I have contacts I can rely on whenever I need them.” At Hoval, these contacts are project members Wilhelm Bauer, Nikolaus Kirchberger and Robert Peschke, as well as Mathias Baumann, a qualified specialist planner in the field of heating, ventilation and plumbing, who continue to work intensively to ensure that the system is functioning perfectly.

A renovated farmhouse



What used to be an operational farm is now a fully renovated estate, complete with a new annexe and a total of eight modern flats. The property owner wanted to ensure that the residents could enjoy a very high level of comfort. He opted for a central gas heating system and some comfort ventilation systems from Hoval.





This plot of land, which used to feature a historic farmhouse, a barn and a dilapidated old single-family house, is now home to a combined building complex that fits perfectly into the local architecture.

The location in the Bözberg nature reserve, between Brugg and the Fricktal region in Switzerland, couldn't be any more beautiful. It is home to the little hamlet of Gallenkirch, which lies on the crest of a hill and boasts a sprawling view over forests and meadows. This location also caught the eye of Roland de Stefani. A few years ago, he bought a plot of land there which included a historic farm dating back to 1835, a barn and a dilapidated old single-family house. Even at that point, as someone who ran a general contractor business in the construction sector for a long time, he was probably already thinking of the potential it held. Today, he has turned his ideas into reality. The old farmyard with its three buildings has been transformed into a combined building complex that fits very harmoniously with the rural architecture of the local area. And for the residents, there are eight comfortable flats, along with an underground garage. Roland de Stefani took the task of designing the renovation into his own hands and, though he came up against many challenges, he determinedly pressed ahead with the realisation of his plans. The old single-family house had to be completely hollowed out and connected to the farmhouse, while the barn had to be replaced with a new annexe.

Gas heating: the perfect combination of ecology and economy

When it came to the matter of heating technology and the choice of Hoval products, there were two key factors that played a role in Roland de Stefani's decisions. Firstly, there was already a Hoval oil heating system performing very reliably in the old farmhouse. In addition, Mr de Stefani is still active in the construction sector with his company RDS Fenster + Türen GmbH, which is how he came to meet Giuseppe Campanella, Technical Sales Consultant at Hoval.

And after the two of them visited Hoval's main plant in Vaduz together, there was no longer any doubt in Roland de Stefani's mind. "Hoval products are simply top-level, from a technical standpoint," he says. Together with Giuseppe Campanella, he then considered various heating technology options. For cost reasons, geothermal probes were not an option. Mr de Stefani also decided not to use heat pumps because he felt that the outdoor units would not be consistent with the overall aesthetic of the homogeneous rural setting. In the end, he opted for a centralised gas heating system with a 4.3 m³ liquid gas tank in the ground of the site. The gas is processed with an UltraGas® 50 condensing boiler from Hoval. In total, this system – in combination with a Hoval ESSR 1000 calorifier – heats and produces domestic hot water for 1500 m² of living space.



The 1500 m² living space is heated using an UltraGas® 50 gas condensing boiler combined with an ESSR 100 calorifier.

Comfort ventilation ensures high standard of living

Roland de Stefani's high standards of quality are also what prompted Giuseppe Campanella to introduce him to Philippe Anderegg, Technical Sales Consultant for Comfort Ventilation at Hoval, for a non-binding discussion. Philippe Anderegg: "At first, Mr de Stefani wasn't really convinced about the advantages of comfort ventilation. Now, because of it, he is saving heating costs and the residents get to enjoy a healthy, comfortable climate."

Philippe Anderegg argued that, due to their heat and humidity recovery, the HomeVent® comfort FR or FRT 251 comfort ventilation systems create a balanced indoor climate – even in enclosed spaces such as bathrooms. The system reliably filters out odour emissions and pollen from the rural environment. And finally, the controlled change of air without opening windows reduces the building's heating costs. These are the arguments that won Mr de Stefani over. Now, each of his newly renovated flats is fitted with an autonomous comfort ventilation unit.



Each of the newly renovated flats is fitted with an autonomous HomeVent® comfort ventilation unit.



Giuseppe Campanella, Roland de Stefani and Philippe Anderegg enjoyed working together on this successful project.

Keeping maintenance costs down in the long run

Roland de Stefani has invested a great deal of work and passion in this project. Now, his careful balance of location, building and technology has resulted in one thing above all else: quality of life. At the same time, however, it also testifies to a great deal of forward planning. "The high level of construction quality and living comfort are one thing. Low maintenance costs and long-term value for money are equally important. The gas heating solution and comfort ventilation systems from Hoval play a key role in this regard," says the construction expert. And when asked about his experience of working with Hoval, he says: "The specialists at Hoval are not only highly competent, they are also on hand to help whenever you need them."

“The specialists at Hoval are not only highly competent, they are also on hand to help whenever you need them.”

Roland de Stefani
Property owner and planner



Modern technology in old walls

A Hoval system solution brings modern comfort and contemporary efficiency to a historic building in Italy.



The picturesque Cappuccini Resort is located on the slopes of Monte Orfano in the heart of the famous Franciacorta wine region. The old building, which was originally constructed in 1569 and served for a long time as a Capuchin monastery, had already fallen to ruin when its current owners, a family, bought it in 1987. They gave it new life in the form of a characterful hotel, restaurant and spa.

During the renovation process, all the charm of the historic architecture was preserved. The basic structural elements of the rooms, corridors, cloisters, courtyards, fountains and chimneys were left unchanged. Guests can also soak up some history in the resort's 56000 m² park; for example, by taking a stroll to see the ruins of a Roman tower.

Boilers and water heating systems

This recent energy refurbishment called for a complete solution from Hoval. Boilers and water heating systems were sized in accordance with the building's actual requirements. The owners opted for an UltraGas[®] D (250) set with two condensing boilers and high efficiency, an EnerVal (800) buffer storage tank and a TransTherm[®] aqua F module (6-50) for heating domestic water using the continuous flow principle.

Centralised and room-specific control

The temperature in the different rooms is controlled individually using the Hoval TopTronic[®] E system controller. The heating in each room can be controlled from the reception desk or via the TopTronic[®] E easy room control module.

The room heating and water heating systems in the resort spa were also modernised. This involved the installation of a 120 kW Hoval Slim BC-i wall-mounted boiler, a modular system complete with a cascade boiler specially prefabricated for the Italian market, as well as an EnerVal 300 buffer storage tank and a TransTherm[®] aqua F instantaneous water heater (6-16).

"Despite the complexity of the project," says Eurofluid, the company that carried out the renovations, "we were able to complete the work without any issues, which was due in part to the continuous support from Hoval."



A complete solution from Hoval supplies the Cappuccini Resort with heating and domestic hot water.

Responsibility for energy and environment