



New Definition of Energy Efficiency
The Schwank Group

Schwank
INNOVATIVE HEATING SOLUTIONS



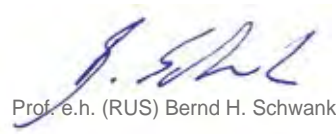
Schwank

Innovative Heating Solutions

- More than 70 years ago, Günther Schwank, founder of our company, invented the first gas-fired infrared luminous heater. Ever since, "heating" has been the focus of all our activities – as warmth is the prerequisite for the comfort and well-being of each individual. However, that alone is not enough: our customers expect energy-saving, innovative and reliable solutions which are supported by a professional and well attuned customer service.

Thanks to our experience, technologically state-of-the-art products and high quality requirements, we are the world's largest provider and hence market leader of gas-fired infrared heaters. More than 2 million heating appliances delivered to satisfied customers in 40 countries speak for themselves. Among our customers rank both medium-sized companies and internationally renowned corporations, as you can see from our references.

On balance, this shows us that we live up to the trust placed in us. As such trust means a lot to us, we have set ourselves the target to keep exceeding the expectations of our customers.



Prof. e.h. (RUS) Bernd H. Schwank



Oliver Schwank



From Visionary to Market Leader



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The focus of attention: The first generation of gas-fired heaters in the centre of Hamburg.

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The Patent which Shaped History

■ From visionary to market leader

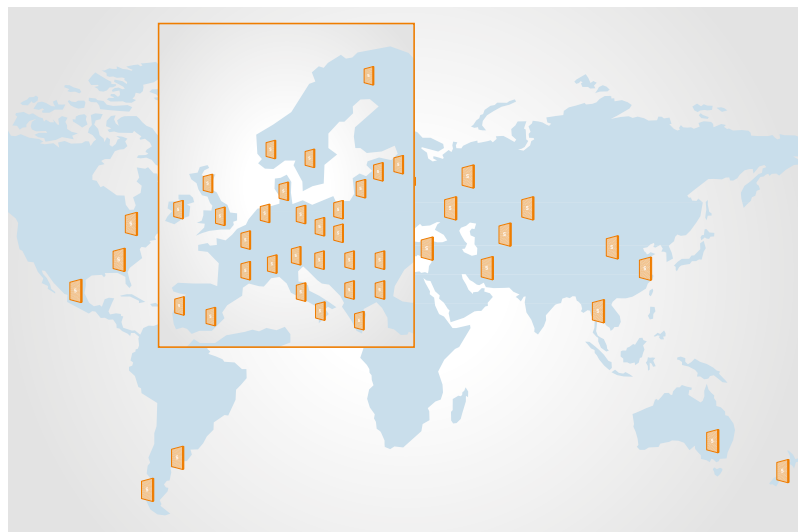
The success story of the Schwank Group started in 1933. At that time, the young engineer Günther Schwank was working on gas-fired appliances in order to improve their combustion efficiency. Soon enough, he came up with an ingenious idea: he developed the first infrared heater operated with burner tiles and patented it in 1938. Today, the Schwank Group is running three production sites worldwide as well as two Research & Development centres and is active in more than 40 markets of which 14 are Schwank owned subsidiaries.

Benchmark of industry

In order to live up to our claim for leadership, we must always remain one step ahead. Which is why Schwank is considered the benchmark as regards radiant factors [efficiency], product assortment, technology leadership, service and internationality. We are continuously striving to further expand these performance parameters, as we have set ourselves the goal to further exceed these expectations in the future.

◀ Ing. Günther Schwank

ca. 1934 – Inventor of gas-infrared heating system; founder of the Schwank Group



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The Schwank management is awarded the "Großer Preis des Mittelstandes" [medium-sized enterprise award].

At home in more than 40 countries all over the world: high quality and economic efficiency are in great demand globally.

Positive Energy for Systems that Convince

■ Efficiency in everything we do

To manufacture innovative high-tech products with the highest quality standards requires full effort and commitment of every single employee – from production via quality assurance up to sales and service.

More than 380 employees at your service around the world

As a highly committed and attuned team, our employees are available to you everywhere in the world. No matter whether we are talking about design, implementation or maintenance of your heating system. We provide state-of-the-art advice on research and engineering. For it is not only our engineers that make use of regular advanced training & education. All employees feel obliged to aspire after knowledge.

Acting sustainably and helping to design the world

Our employees get involved in the most varied of committees and research groups to contribute to the design of global standards and directives with their know-how. With the objective of developing the most efficient industrial heating in the world.



Using their experience and know-how:
the Schwank sales team in action.



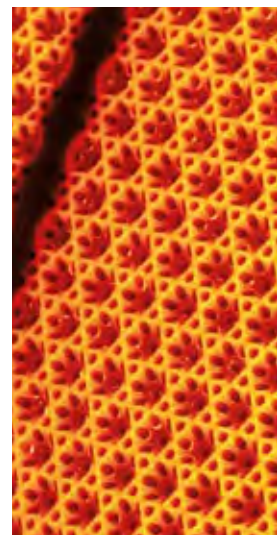
Positive energy field-tested everyday:
employees of the Schwank burner tile division.

Our Priority: Customer Satisfaction



During the commissioning phase,
the quality is put to the acid test.

We Do Research, You Benefit



Dipl.-Ing. Torsten Kallweit, Ceramics Engineer,
analysing the new generation ceraSchwank.



Innovation - the Driving Force behind Cost Effectiveness and Efficiency

■ Breakthroughs which change the world

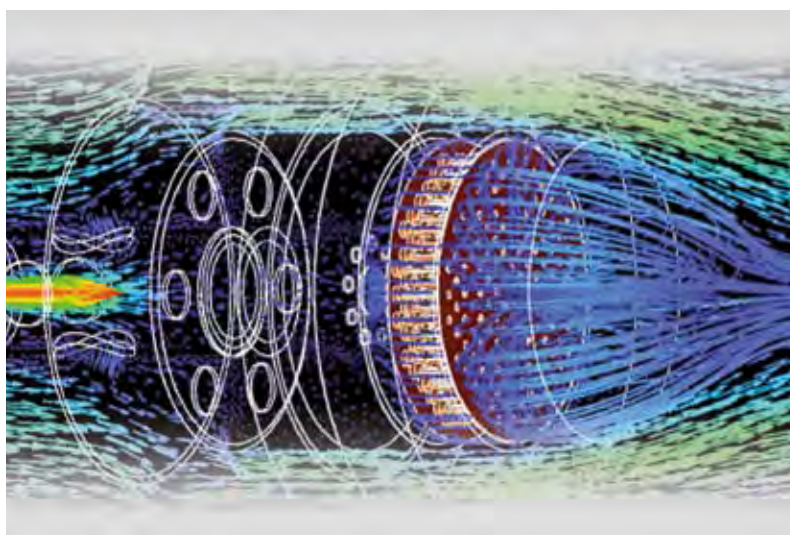
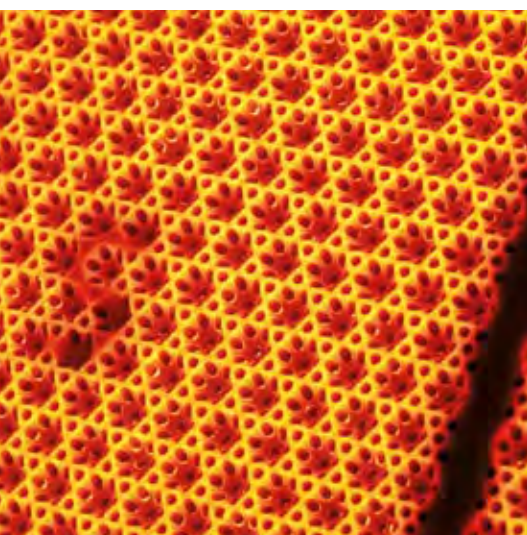
Within the industry, Schwank is considered the pioneer of innovation. 40 patents have been granted worldwide which set the standard for efficiency and low CO₂ emission.

Both of our two development centres in Germany and North America keep working hard to continuously improve the appliances' performance.

The result is regular technical breakthroughs. For instance, the patented delta-mixing-chamber, the patented ceramic burner, the power modulation or the first heat recovery for infrared heaters.

◀ Dipl.-Ing. Konrad Weber

Director R&D of the Schwank Group



Values

We Treasure

■ Top quality from the market leader

It is our quest to produce technologically demanding products. Efficient, economical, future-oriented – features that are literally reflected in every single Schwank product. Schwank luminous and tube heaters achieve radiant factors that lie far above those of most other commercial appliances. And high radiant factors are the best proof for cost effectiveness and efficiency. Working efficiently means saving money. One reason why Schwank systems will pay for themselves within a short time.

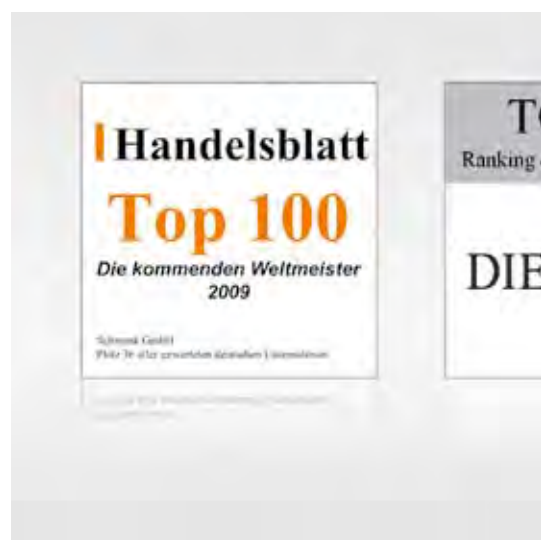
Award-winning innovations

What best illustrates the continued positive corporate and product developments are the various awards that Schwank has received over the past years. These awards confirm and underline the maximum quality and innovation demands made by Schwank setting new standards throughout the industry. This inspires our customers with the trust that they have made the right decision.

Uta Lange ►

Marketing and Corporate Communications
with a patented ceramic burner tile of 1938

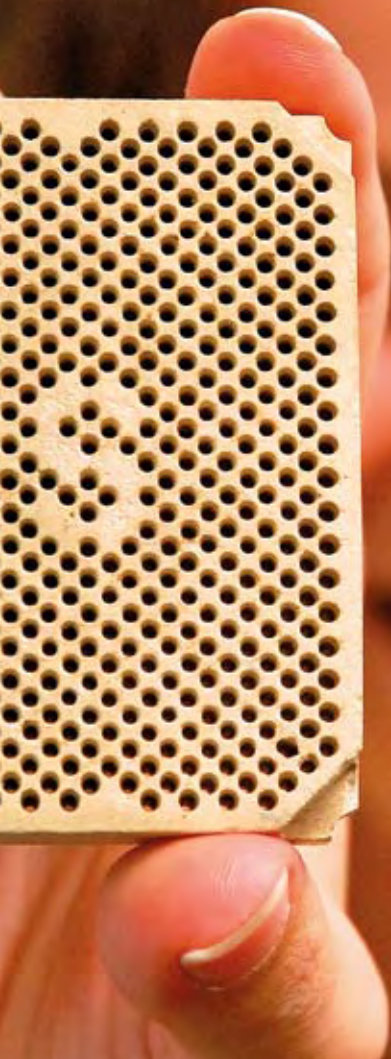
Award- M



Multiple awards have been granted for outstanding economic efficiency and market leadership.

"Die Welt" and "Handelsblatt" place Schwank among the TOP 100 medium-sized companies in Germany.

winning Products made in Germany



"Manager Magazin" sees Schwank among the most important world market leaders in Germany.

The "Großer Preis des Mittelstandes" is awarded to the medium-sized company Schwank by the Oskar-Patzelt-Stiftung.

Effective Like the S Comfortable W



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Infrared: Warmth you Feel Immediately

■ Like taking a sun bath on a glacier

The principle of the Schwank infrared heaters is simple and is derived from nature. Although the air temperature is actually below zero, it is comfortably warm in the sun. This is due to the radiation heat, or infrared radiation to be correct, from the sun. Where the infrared rays occur they are converted to warmth, for instance on our skin. Schwank infrared heaters utilise the same natural principle to heat buildings efficiently. The only difference being that the warmth is directly generated at the place where it is needed – the working level.

When using the **hybridSchwank** system, even more energy may be saved. **hybridSchwank** manages to extract the last bit of warmth and make it available to the building as heat or as hot water. Something even the sun cannot accomplish. We believe this to be the energy use of the future – and the future is green.

Good for the Environment Intelligent

01 Heating systems



03 Heat exchanger



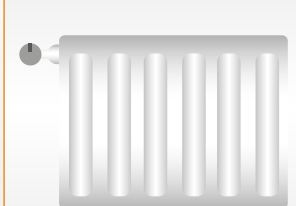
05 Building management technology



02 Controller



04 Office heating



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01 Heating systems – Schwank infrared heaters have been awarded prizes and proven to yield above-average efficiency while at the same time being remarkably ecological.



02 Controller The intelligent control management ensures that the switch-on timing of the individual heating zones is optimised. In this way, the pre-heating time is reduced to a minimum.



03 Heat exchanger The thermal heat from exhaust gases is passed on to a storage cylinder e.g. for heating offices.



04 Office heating The thermal waste heat of the production facility is made available to the office heating system. In addition, the captured heat may be used to heat up sanitary water.

ent t Heat

06 Remote enquiry



Green Building

Heat recovery monitored by building management technology

More Performance with Green Technology

■ Saving the environment with Schwank

Ecologically sensitive thinking and acting has gained more and more importance in public over the past few decades. By enacting the regulations EnEV [Energy Conservation Regulations] and EE-WärmeG [German Renewable Energies Heat Act] the legislator has defined provisions which are already quite strict. Schwank industrial heaters even exceed these criteria and requirements to a noticeable extent. For quite some time now, Schwank has been using systems with reduced CO₂ emissions that help preserve resources: e.g. in the fields of energy recovery Schwank may point to no less than 15 years of experience. hybridSchwank achieves a max. thermal efficiency of 118%. An eco-friendly concept that saves energy.

What is more

As a member on various committees, like the DGNB [German Sustainable Building Council] and the US Green Building Council, Schwank is continuously cooperating in working out new and trendsetting solutions for the heating of industrial and warehouse buildings. A couple of projects have been awarded gold certificates not least due to the use of Schwank heating solutions.

hy i Schwank
ENERGY RECOVERY TECHNOLOGY



DGNB[®]
Deutsche Gesellschaft

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Building management technology – Control, management and adaptations may be realised via the internet in the office or from 10,000 miles away. Integration in the installed building management technology is also possible.

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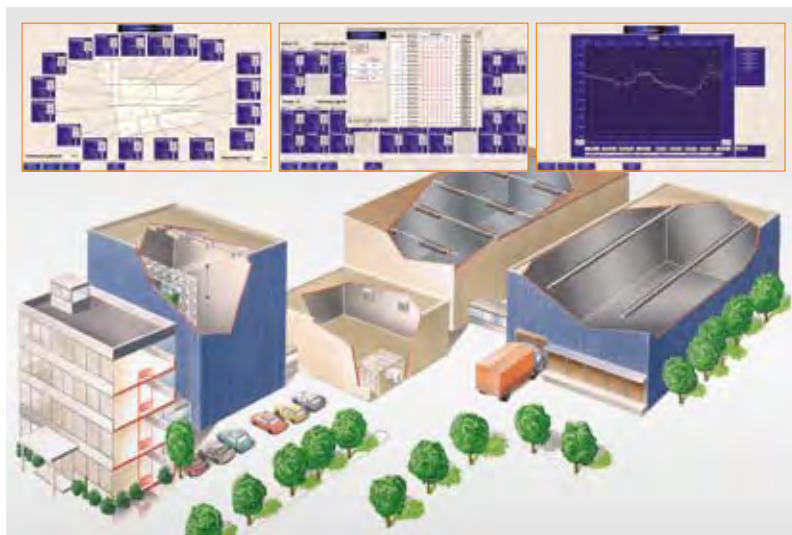
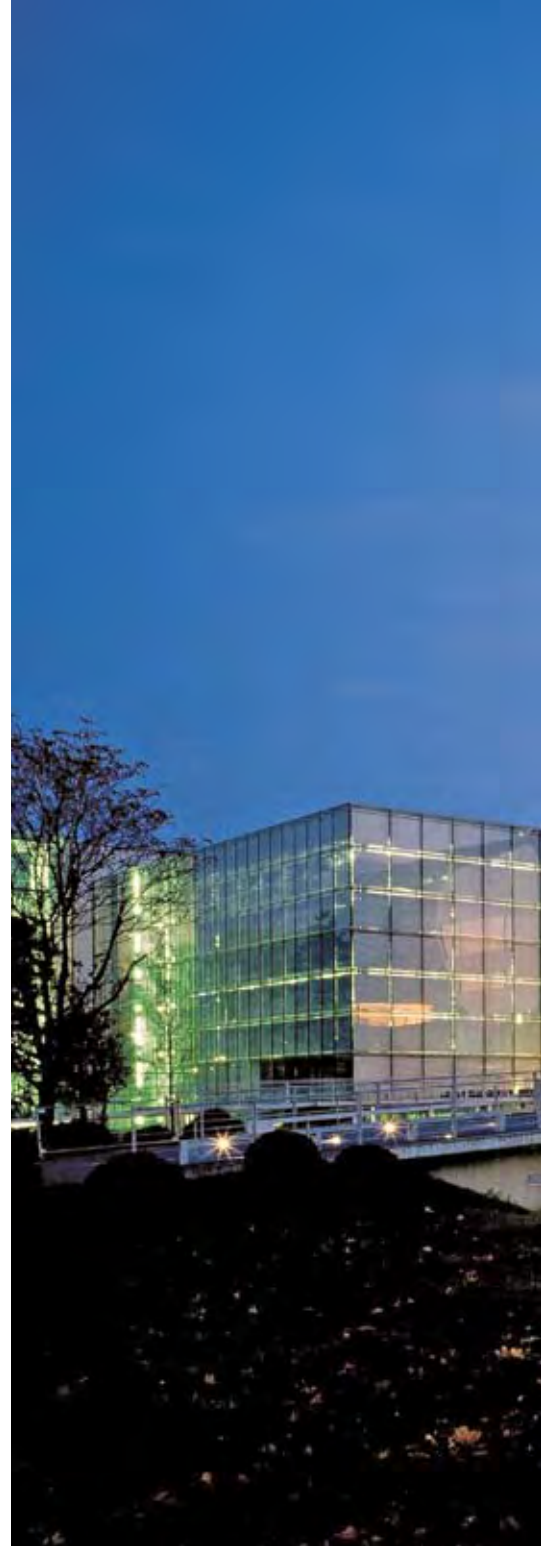
Remote enquiry – Mobile phones may be used to check data or comfortably operate the system.

Intelligent Heat – BMS at its Finest

■ Building management of the future

Modern building management technology links Schwank heating systems to all other building service installations. In this way, Schwank heating systems can be operated in an even more economical and efficient way. On/Off cycles as well as the modulation control are optimised automatically. In addition, the responsible handling of light, residual heat, cooling, fire protection and other valuable resources considerably lower the energy consumption of the buildings.

With the Schwank Building Management Systems – various buildings may be centrally controlled, monitored and checked. No matter your whereabouts.



Quite simple: Temperature zones and temperature profiles of the individual buildings may be set and read individually.

Absolute flexibility: Consumption control and adjustment of the various heating values from the head office or from anywhere in the world.

Energy Efficiency with Building Management



ThermoControl Plus M with learning logic module:
A heating system can only be as efficient as its control unit.

First-Class Service



Comprehensive service network for our customers:
The Schwank service sets the industry's standard.



The Service behind the Brand

■ Service makes all the difference

We do not save money in the wrong place: And certainly not on the service network, so that we are there when you need us. At last, our brand only promises as much as the service behind it. For our customers, this means added value. Schwank branches all over the world are available for customer service around the clock.

On-site in no time

The dense service network composed of Schwank employees, heating specialists and authorised experts is designed in such a way that you will receive advice and support related to installation, maintenance and repairs at any time.

We are only satisfied if our customers are as well.



Applications in Production

- Approx. 150,000 satisfied customers are using Schwank solutions. Energy savings of 50% compared to conventional systems are not unusual.

For instance, *BMW* was able to save 47% for their Mini production, while the *US Army* even saved 71% energy at one of their bases.



Worldwide, Schwank heating systems are being used by leading steel manufacturers, like *ArcelorMittal*, *ThyssenKrupp*, *Tata Steel* and many more. They serve for both economically

heating production facilities and for avoiding condensation in coil warehouses. Using Schwank infrared heaters, the air humidity may be controlled thus preventing corrosion of the coils.



Applications in Distribution Centres

- In excess of 10 million m² of heated distribution centres. Thanks to the unique concept, which has been worked out in cooperation with customers

and universities, our customers save energy while the CO₂ balance looks good at the same time. The result: savings of between 20% - 45% compared to conventional systems.



Intelligent Radiant Heat



Applications in Railway Facilities

- Renowned railway companies in Europe, Russia and North America rely on the Schwank brand. It is mainly used in service sheds and depots.

The low energy demand combined with the short reaction times are logical buying motives for railway enterprises.



Applications in Military

- All over the world, armed forces like in the USA, China, Germany, Canada and Russia trust in the use of reliable heating systems. Based on comprehensive kerosene evaporation tests

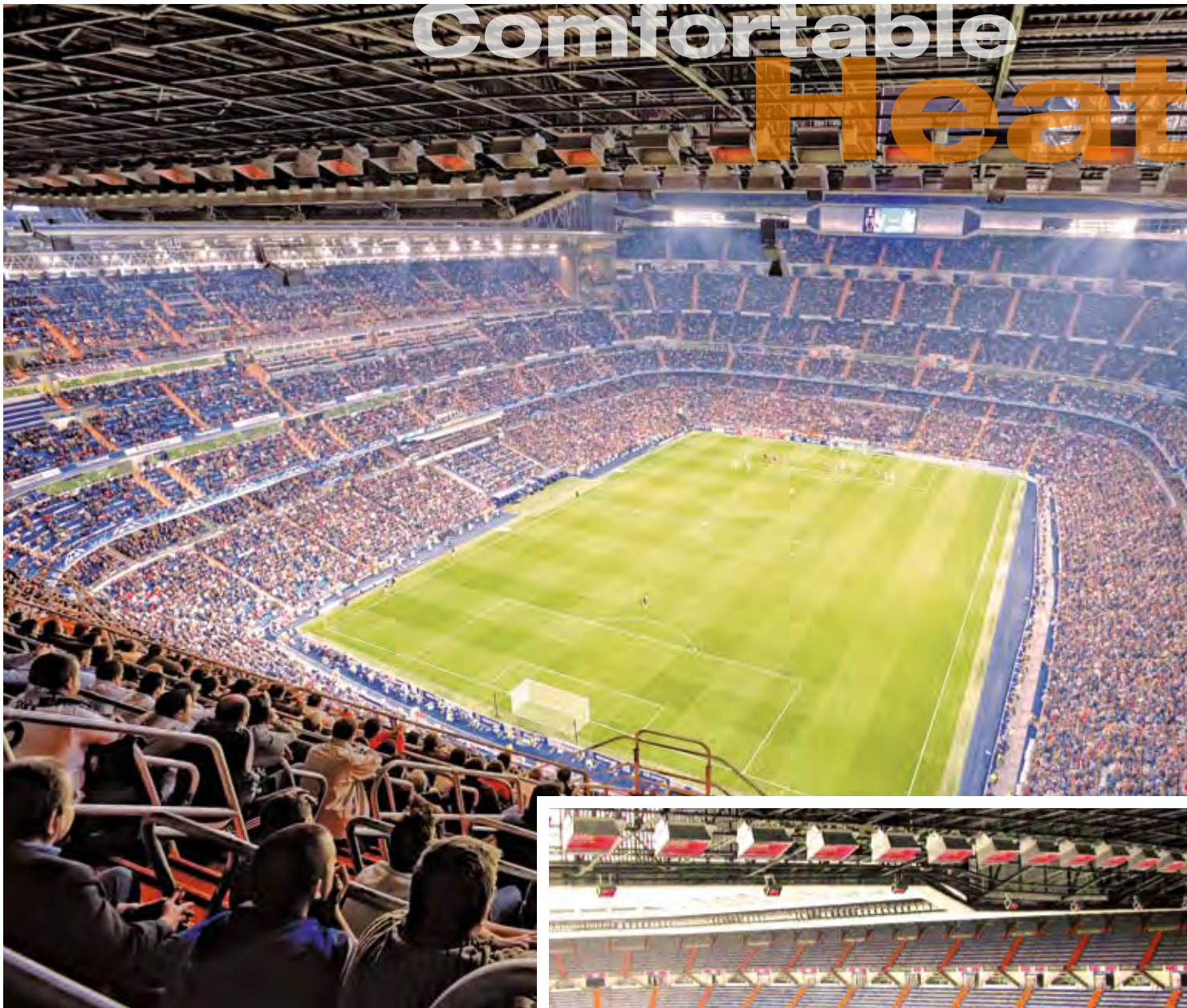
and the excellent energy efficiency, Schwank systems are used in technologically complex fields of application. Also the US President's helicopter *Marine 1* effectively uses the reliable heating technology "Made in Germany".



Applications in Stadiums

- *Real Madrid* like 20 further stadiums have opted for comfortable warmth for their fans.

Comfortable warmth for just € 0.04 per spectator and game is an investment that pays off. A fact confirmed by clubs and fans alike.



We Have Set Ourselves the Target to Exceed your Expectations

■ Our key to success

Our customers are the basis for our success – a fact we are more than aware of. Last but not least, we – as a company with in-house development and

production - are in the position to meet the expectations of our customers related to superior performance, quality and service. After all, more than 98% of our customers would recommend us to others.

Customer Satisfaction Our Ultimate Aim



[from left to right]

Wolf-Christian Heyneberg

Facility Manager, Welger Maschinenfabrik GmbH

Dr. Ralf Utermöhlen

Managing Director, Urbana Agimus Contracting GmbH

Robert Hennig

Project Engineer, Urbana Agimus Contracting GmbH

Peter Steininger

Project Manager, Schwank GmbH

■ Performance, quality and support for customers

Thanks to our internationality, we quite frequently attend to our customers worldwide.

For instance, Siemens trusts in our solutions in Germany, the USA, France and China and relies on our support at every location.



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