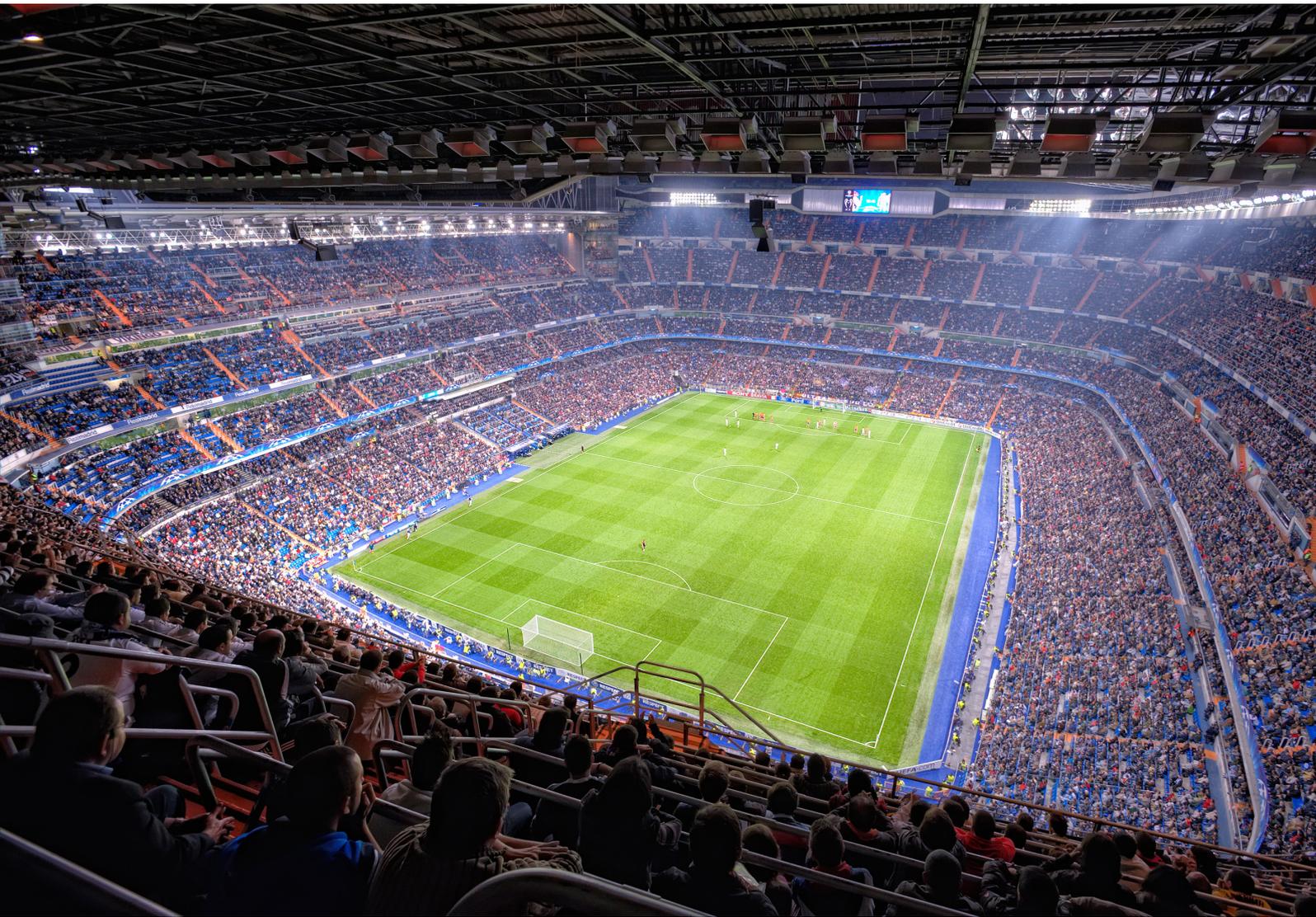


Innovative Stadium Heating

Amazing Comfort on Cold Days



Comfortable Ambience

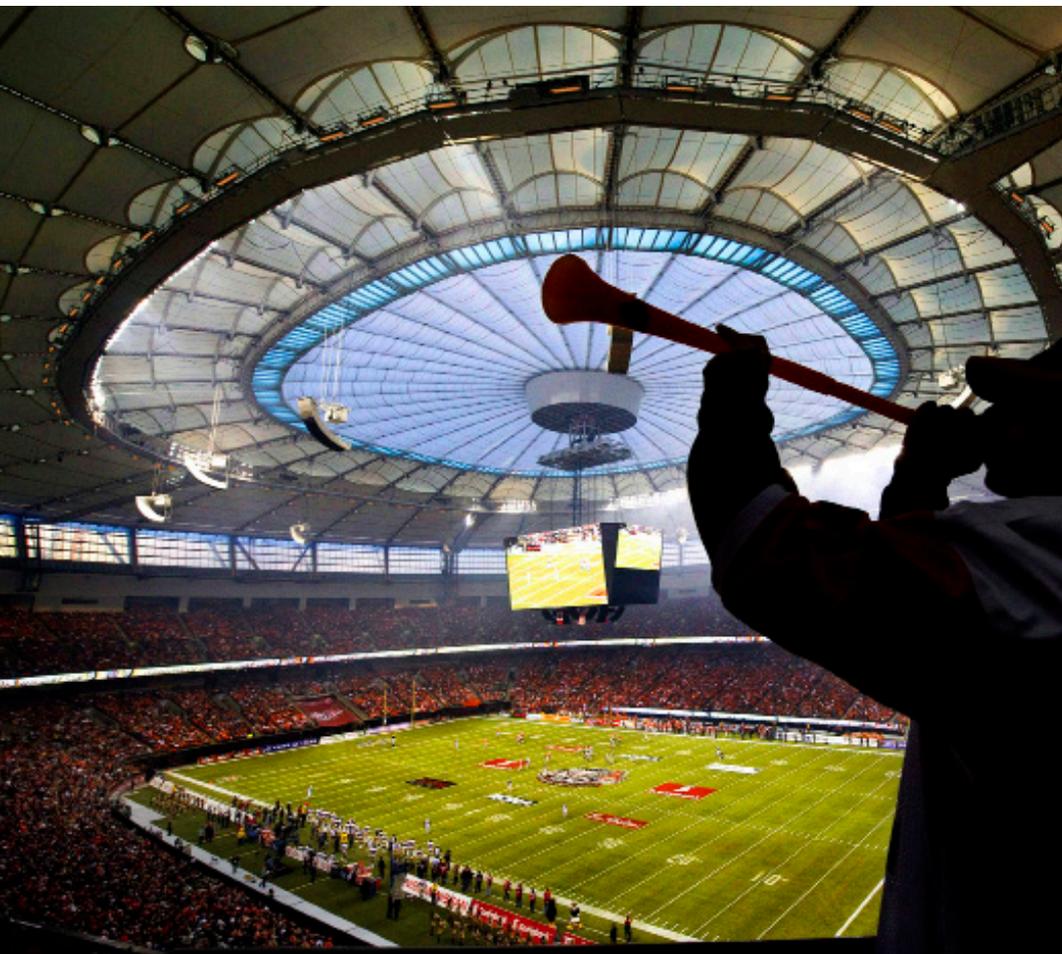
■ Why stadium heating?

Uncomfortable spectator viewing areas in football stadiums are becoming out of fashion. A constantly increasing number of visitors expect a comfortable environment when enjoying a sports event – also in most countries the sport has evolved from a ‘men only’ sport to a family experience tying in women and children. The increased demands on football have also changed the architecture of the stadiums. Exclusive lounges are offered to attract VIPs from the fields of business and politics where a high

level of comfort is obligatory.

Another trend is to exploit the stadium capacities for other events outside of football. With a comfortable heating system in place, stadium operators can attract events such as for concerts or special events during the colder months. In the past concert event operators would not have considered this option.

Many famous football clubs, such as Real Madrid, Sparta Prague, FC Chelsea, Feyenoord Rotterdam and Fenerbahçe Istanbul have recognised the importance of this and have invested in innovative stadium heating systems. In the Netherlands, for instance, a stadium heating system is actually regarded as a fundamental option in the planning of a stadium.





Real Madrid: 85,000 spectators capacity. Fully heated by 1,100 Schwank units. Highest mounting point at 55 meters.

Infrared radiation as an ideal heating method

Due to the open structure of stadiums and their susceptibility to wind, heating systems are presented with a unique challenge. First of all, radiant heaters must withstand wind during normal operations. Below the roof, wind currents and turbulences [defined as wind with changing intensity and changing directions] are very common even in cases where wind is not considered to be an issue.

Due to the challenges only the solution of the use of infrared heaters seems suitable. The impact of this heating technique is comparable to the effect of the sun on cold winter days: despite prevailing low outside temperatures, it is quite comfortable to stay in the sun. This is because the infrared energy is transferred into heat once it hits the skin and clothing. Our systems work the same way.

Schwank - a Strong Partner

■ The Benefits of Schwank infrared heaters:

The heat is directed precisely to where it is required - the area where the spectators are. The heat can be felt almost immediately; shortly after switching on the systems due to the quick reaction time of this unique heating system. As the infrared heater is always ready to be put into operation, there is also no need for long heat-up phases.

Further, it minimises the energy consumption and thereby the energy costs significantly.

Other advantages include:

- Possibility of full-zone heating or heating of restricted areas such as VIP's only
- Direct, quick heat
- Uniform heat distribution
- Environmentally friendly - low amount of NO_x emissions
- Low energy consumption, low maintenance costs



cost?

How much does it

The stadium stands can be heated for as little as € 0.03 [£ 0.04] per spectator per game – low costs, which will quickly pay off in terms of boosted image and comfort.

When considering the image improvement for the Club, which, in addition, is a marketing argument, investing into the stadium stand heaters pays off.

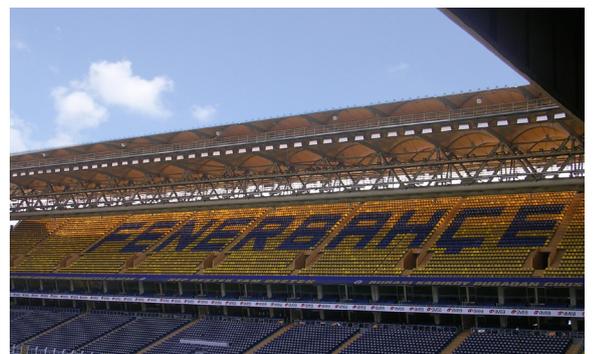
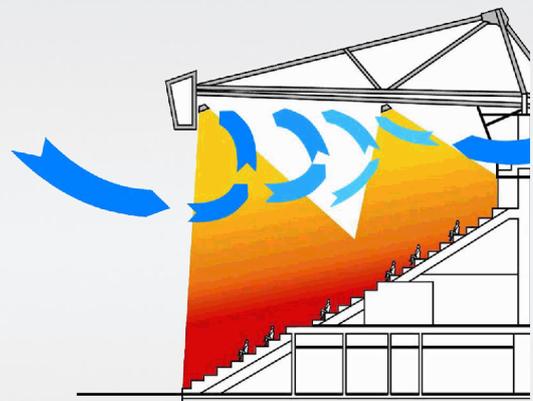
Tying in supporters into the club's franchise has evolved into a long-term partnership. While the relation is reciprocal, providing more comfort to supporters, sponsors and VIP's is a reasonable consequence.



The Patented Wind Protection:

Strong turbulences occur below the stadium roofing due to thermal influences and wind even if these cannot be felt on the grandstands. The wind impacts the effectiveness of the heaters significantly.

As a result the wind protection is indispensable in order to warrant a dependable functioning.



Comfort through Schwank Heaters

■ sportSchwank

In cooperation with renowned industrial designers, Schwank engineers have developed special heating systems with patented features for application in stadiums, which meet the extreme requirements for the heating of stands:

- High radiation efficiency guaranteeing high infrared output even at low ambient temperatures
- Patented wind protection being reliable even when facing high wind velocities
- Special reflector designs with preset opening angle depending on the installation height and required radiation density even for high installation positions of more than 60 m



- Microprocessor-controlled ignition and monitoring devices, intrinsically safe through multiple ignition and dual monitoring features
- Targeted and uniform heat distribution within the spectators' area
- Weatherproof housing of the ignition and control unit
- All components are corrosion protected in an elegant design
- Quality "Made in Germany" 

As a German manufacturer, we aspire to a high standard of excellence in delivering products and service of the highest quality. Each single Schwank product excels by adopting economic procedures with minimum CO₂ emission.

Just some of our references:

Real Madrid - AZ Alkmaar - Sparta Rotterdam - **AC Sparta Prague** - Rutgers University - FC Twente **Eindhoven** - FC Den Bosch - **Feyenoord Rotterdam** - NEC Nijmegen - Kayserispor



Schwank:

„The results of Schwank stadium heaters have clearly exceeded our expectations. All the VIPs really liked the heat; they appreciate the high comfort, especially on cold days.”

Innovative. Experienced. Competent.

- For decades, the name Schwank has been synonymous with high-quality and economical heating and cooling systems. As market leader for gas infrared heating systems, Schwank has extensive experience. More than 200,000 satisfied customers and more than 2.5 million manufactured units speak for themselves.

As a German manufacturer, we stand by our claim to deliver products and services of the highest quality. Each of our products guarantees an economical and CO₂ & NO_x minimised operation. Experience creates reliability.



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