SPEED SKATING STADIUM – MAX AICHER ARENA

INZELL, GERMANY, 2008-2011

Client
Gemeinde Inzell
Architect
Behnisch Architekte, München
with Pohl Architekten
Planning and construction
2008-2011
Gross
20.000 m² / 223,351 sq.ft.
Volume
308.237 m³ / 1,088,529 cu.ft.
Address
Reichenhaller Straße 79
83334 Inzell
Germany

The Bavarian town of Inzell hosted the 2011 World Single Distant Speed Skating Championships. To create the world-class competition conditions required for this and forthcoming events, the existing outdoor speed-skating track was upgraded through the construction of a high-performance intelligent roof structure. This improved arena can accommodate up to 7,000 spectators and offers maximum flexibility for large scale world class competitions as well as regular seasonal speed-skating training.

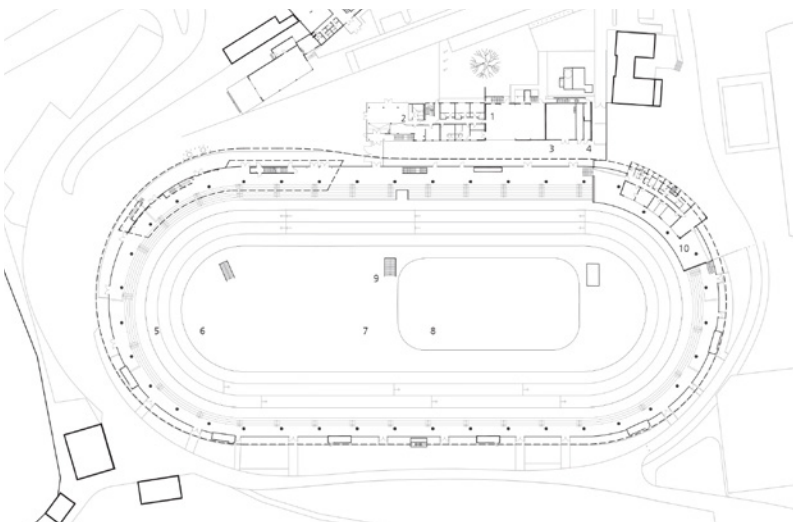
The 200 meter long and 90 meter wide arena was planned as an independent wide-span structure, free of interior columns. The athletes and spectators can enjoy panoramic views of the Bavarian Alps through the continuous glass facade which stands as a transparent band between the cloud-like roof and the concrete grandstands flowing into the landscape. At the same time, passers-by can look into the stadium interior and catch a glimpse of daily activities.

The roof itself embodies a precisely designed interior climate concept that ensures optimized energetic, economic, and sustainable operation of the ice track on a daily basis. On the underside the roof is fitted with a “Low-E” membrane stretched between the lower cords of the ten-meter high timber and steel trusses. The function of this engineered fabric is to reflect the ice’s own cold thermal radiation back onto the speed track, thus maintaining the low temperature of the ice surface. Simultaneously, this membrane maximises the quantity of diffuse daylight that streams into the stadium through the roof’s seventeen large north-facing skylights. In order to ensure a well-balanced indoor climate, the

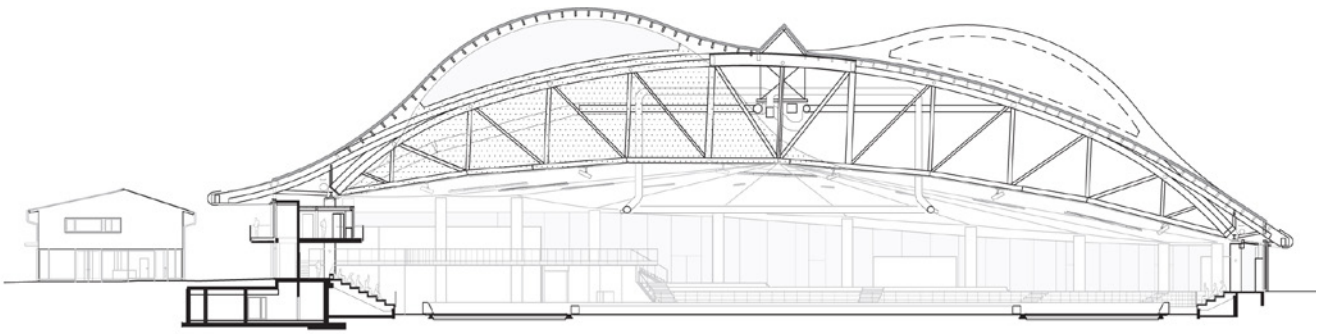
skylights are glazed by transparent, three-layer ETFE cushions.

In addition to optimizing the use of daylight, the energy concept for the stadium incorporates several other sustainable measures. Wood pellets with a neutral energy balance are utilized to produce energy. The exhaust heat from the machinery that cools the ice is then repurposed to provide heat in the grandstands of the stadium. In addition, energy loss is further reduced through the use of special nozzles above the ice, specifically positioned to blow the dehumidified cool air at the ice at a very precise angle.

A number of existing support buildings were also upgraded in order to integrate them into the arena's overall concept of optimum energetic performance.



Level 1



Long section

0 6 10 15 20 m
0 10 20 40 65 ft


ROMANIA


Level 1