

BayArena

A New Destination for Leverkusen

If you Google “Leverkusen“, the first result you get is Bayer 04’s website, which just shows how closely the links are between Leverkusen and football.

Leverkusen’s football history begins in 1923 with the construction of the first sports ground with two pitches, simply known as the “Bayer-Field“. In 1932, the “Am Stadtpark” stadium was officially opened in the “Bayer-Wohnkolonie” residential area and in 1941, the capacity of the stadium was extended to 15,000 through the construction of a wooden stand. In 1956, the ground-breaking ceremony for the Ulrich Haberland Stadium, named after the former Bayer AG chairman, was held in the Bismarckstrasse. A number of alterations and extensions to the ground were carried out in the 1980’s and 1990’s but the opening of the completely modernised and reconstructed BayArena at the beginning of the 2009/10 season marks a start of a new era.

HPP’s architects first started examining the construction of this sports ground, situated on the Leverkusen junction of the A1 and A3 motorways, in 2002 when they were invited to participate in the competition to optimize the BayArena. The Düsseldorf partnership is no stranger to designing and building sports stadia; starting with the design and construction of the “AufSchalke“ arena in Gelsenkirchen (completed in 2001) followed by the “Volkswagen Arena” in Wolfsburg (completed in 2002) and the remodelling of the “Frankenstadion” in Nuremberg (completed in 2005) they also designed the “SAP Arena” in Mannheim (completed in 2005). Today, a team of 10 is solely responsible for stadia and arenas, most recently as part of a design consortium on the Baltic-Arena in Gdansk that is to be completed in time for the European Football Championships in Poland and the Ukraine in 2012; ideal qualifications for taking on the challenge of reconstructing the Leverkusen arena.



View South West

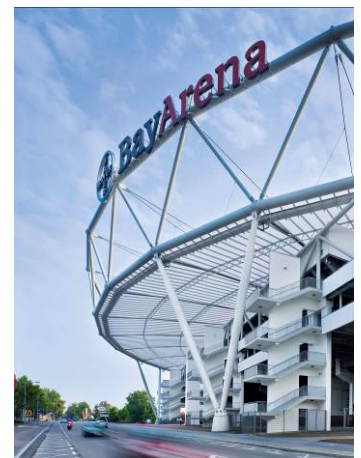
From “Jewellery Box” to modern Arena

The stadium that Leverkusen’s locals affectionately called the “Jewellery Box” due to the transparent roof, the heated pitch and the radiant heaters in the stands, couldn’t match the standards required following the 2006 World Cup and the capacity of 22,500 was too small to enable Bayer 04 to continue to compete at an international level.

As soon as the board of Bayer 04 approved the rebuilding plans of its subsidiary company, Bayer 04 Leverkusen Fußball GmbH on 29th March 2007, HPP, as lead consultant and architect, began to work up the competition plans in detail. Construction started a few months later, in December 2007, with the removal of the old stadium roof and the demolition of the West Stand. The rebuilding mainly concentrated on extending and reorganising the team rooms, including a physiotherapy area and rehabilitation centre, providing a new hospitality area, restructuring the media area and expanding spectator capacity along with the construction of the new roof.

A new four-storey structure was built on the site of the current west stand, providing 20,000 m² of space and an underground car park. The structure, built with a reinforced concrete skeleton, appears as a stilt-mounted cube with a full-height glass façade that runs around three sides, its lightness and transparency joining it seamlessly to the existing building. A highly modern team area with a physiotherapy and rehabilitation centre on the ground floor of 2,600 m² provides four times more space than before. The players have direct access to the professionals’ area through the underground car park in the south-west of the stadium. The main entrances for stadium visitors, press representatives and VIP guests on the ground floor have been provided with a plaza measuring 125 meter by 25 meter and opening out to the west. This plaza can be used independently of football matches for all kinds of other events. The VIP and hospitality areas are on the upper levels, as well as a technically sophisticated media area with room for 228 journalists on the top tier and additional event spaces that can be used as conference rooms on match-free days and divided as necessary with operable walls.

The capacity of the arena has been increased to 30,500 through the addition of a solidly-constructed top tier with 14 rows of seats. As the



View South Bismarckstrasse

existing southern stand is to remain in use; the boxes, the “Calcio” restaurant with its business seats as well as Bayer 04 Leverkusen’s offices are all housed here, this upper tier was constructed in a u-shape. On the eastern side, 16 further boxes and skyboxes were added to the existing boxes in the north and south.



View West Stand

The Stadium Roof: Between Engineering and Aesthetics

The most important and most visible change to the BayArena is the new circular stadium roof. With a diameter of 215 meters, the filigree structure appears to float above the stands. The suspended construction is based on the wheel and spoke principle with an external tension ring designed as a series of trussed beams, a ring cable as well as 72 radial cables and 36 tensioning cables. The roof is constructed as a wheel, divided into 36 spokes each with 8 ring segments constructed of struts that span tangentially from one knot to the next. A total of almost 10 kilometer of up to 70 millimeter thick steel cable, weighing 2,800 tonnes was used in this feat of engineering. The weight of the roof is spread over eight doubly-inclined v-shaped pairs of struts, each with a diameter of 1 meter, and thence transferred into the foundations.



View West Stand VIP Club

The roof projects far over the spectator seating in the stands to the east thus providing protection from the elements. It is covered with 1.5 meter wide, translucent polycarbonate (Makrolon) tiles that were specially developed by Bayer for the arena. The use of this filigree construction and the translucent roof covering mean that the open-air atmosphere of the stadium is retained. This free-standing stadium roof, measuring 28,000 m² is the first in the world of its type and size. The delicate beauty and floating grace of the roof is homage to the perfect symbiosis of art and engineering.

BayArena - A New Destination

The official opening of the BayArena 13th August 2009 presents Leverkusen with a new destination. The emblematic stadium roof is clearly visible from a distance and makes the arena instantly recognizable – football fans, visitors to the city and passers-by will all be drawn towards the arena. The new BayArena embodies the concept of a corporate architecture just as is the case with the Bayer Tower W1

(HPP Architects 1959) that is visible from the BayArena and is an expression of the possibilities of architecture of its time. Whether this building will become a trademark of Leverkusen remains to be seen. In any event, this place of pilgrimage will be the focus of all football interest, when the German national team turns out to play in the friendly match against World Cup hosts, South Africa on 5th September 2009.

Project Data

Object: Optimization BayArena

Client: Bayer 04 Immobilien GmbH

Location: Leverkusen, Germany

Planning and Construction Period: 2002-2003 and 2007 until 08/2009

Plot Area: 106,736 m²

GFA Western Structure: 19,780 m²

GFA Top Tier: 3,117 m²

Seats: 30,500

Construction Costs: 70 Million Euro

Competition: 1st Prize 2002

Project Team

Architecture: HPP Hentrich-Petschnigg & Partner GmbH + Co. KG

Project Partner: Günter Kus

Lead Consulting: HPP International Planungsgesellschaft mbH,
Alfred Schwab

Project Team: Jens Jackowski, Fritz Altland, Sema Arda, Simon Gassner,
Gabriele Kurz, Markus Leiting, Achim Leschinger, Brigita Mijatovic, Petra
Neuhaus, Zhengyu Qui, Daniel Stollfuß

Construction Management: HPP GmbH + Co. KG

Statics Massive Buildings: Krebs und Kiefer

Statics Stadium Roof: Schlaich Bergemann und Partner

Building Physics: Ingenieurbüro Santer

HVAC: itg Merten & Partner GbR, EPO Elektrotechnik

HVAC Exterior: SM Ingenieurplan GmbH

Structural Fire Protection: Currenta GmbH & Co. OHG

Landscape Planning: Köthner Landschaftsarchitekt