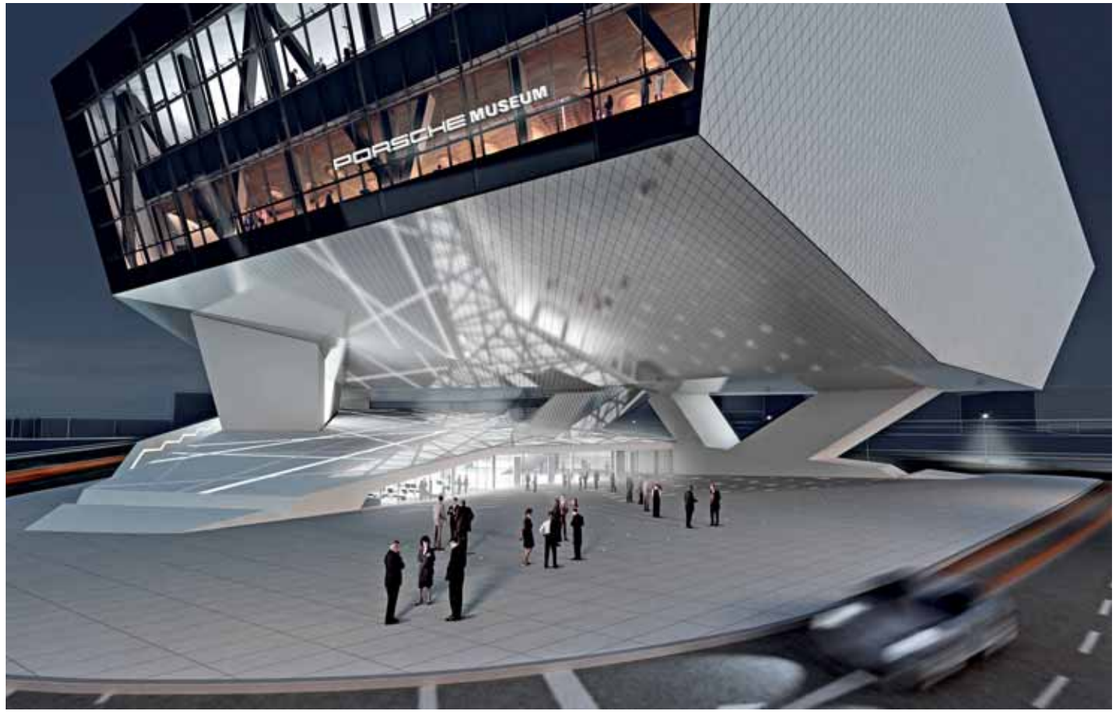
Christophorus 325

The Heart of the Matter

The Company

Every day, new solutions are needed on the fast-growing building site of the new Porsche Museum in Zuffenhausen. In the construction industry, it's known as "Europe's most challenging project."



Framed: The steel frame previews the final shape of the Porsche Museum

Supported: One of the concrete cores that are to carry the bold steel structure is shaped like a "lying Y"

"In the construction industry, our museum project is being called one of Europe's most challenging. What we're realizing here wouldn't even have been theoretically possible a few years ago."

Armin Wagner, Head of Major Projects in Construction Management at Porsche AG

The future is already in place on Porscheplatz, where the new home of Porsche's sports-car history is taking shape. Porsche Public Relations Director Anton Hunger, who is responsible for the new museum, sees a "masterpiece of architecture" rising, which will "be like an entrance hall to the city of Stuttgart, and will greatly enhance Zuffenhausen." One important initial construction phase has been completed: the underground parking garage, the ground floor, the first upper floor, and the three basic steel-concrete supports (the so-called cores) have been built.

Elevator shafts, stairwells, and supply channels are located in the three cores of the building. The mighty concrete blocks serve as high-load supports for the future 5,600 square-meter (60,000 sq. ft.) exhibition area, which is to hover above the first upper floor as an independent structure. One of the supports is Y-shaped, and through it eight thumb-thick stranded cables will be drawn, each 22 meters (72 ft.) long and anchored in end-trestles. They must be pre-stressed with a special device, at a traction force of 300 tons. The technology was developed for bridge construction and is necessary for structural stability. After all, the "hovering" exhibition area will weigh 35,000 tons, including 80 valuable museum vehicles and 200 other exhibits from Porsche history.

Like the construction of a ship or airplane, the imposing ribbed-frame design sketches the future outline of the museum, which sits next to the main plant. Completion is expected by the second half of 2008. The bold contours are already becoming apparent, with some 1,500 of the planned 6,000 tons of the steel frame already in place. Steel beams with spans of up to 60 meters (200 ft.) bridge the spaces between the supports.

"In the construction industry, our museum project is being called one of Europe's most challenging," says Armin Wagner, Head of Major Projects in Construction Management at Porsche AG. "What we're realizing here wouldn't even have been possible a few years ago." Steel-construction engineers who have been involved in projects all over the world are meeting the challenges. Load capacity always has top priority. The correct flow of the enormous forces is constantly being monitored via 3D computer models, using measuring devices in the concrete cores. Even the Institute for Materials Engineering of the University of Stuttgart is involved.

So by now, the new Porsche Museum is starting to hover—without losing its firm grip on the road. ◂

Porsche-Class Concrete

A total of 21,000 cubic meters (740,000 cu. ft.) of a unique concrete blend have already been poured into the new Porsche Museum. Special formulas were used in most areas.

Making the impossible possible is standard operating procedure here. The self-compacting concrete sets very hard, but still has to be able to flow without forming cavities. Both factors are enormously important here, as no one has ever before worked with this material in a dumping height of up to seven meters (20–25 ft.). The conventional vibrating technology couldn't be used, due to conditions on the building site.

"Concrete like this has never before been used in this form in Germany," says Armin Wagner with great pride.