

Magdeburg's Town Square Under Textile Roofing

As an upcoming trade show and congress city, the town which is nearly 1200 years old and located on the Elbe river is also interested in documenting its high cultural and tourist claim visually. The remodelling of the town square, which at the same time is the station square, is a project in this context. Here, a weather-protected area was established by means of textile roofing, offering an optimum framework, not only for temporary events. Also an additional advantage is created for the station square since railway passengers can change to buses or taxi cabs and stay dry: the taxi approach and the path to the Central Bus Station ZOB are now both roofed. Also the "bike & ride" commuters were included in the considerations - the railway station bike depot was also roofed

A plastic-coated polyester fabric type IV (tensile strength warp/weft - 800/700 daN/5 cm) with a double-sided acrylic final coat was selected for the membrane roof. This material supplied in the colour light-grey (RAL 7035) complies with the regulations of fire protection class B1 (DIN 4102). In order to achieve a particularly light and friendly illumination of the structure, the membrane design was combined with an approx. 40 m² large skylight arch made of a special safety glazing.



The supporting structure consists of two steel pylons (a triangular girder) between which the approx. 17 m long skylight arch (triangular girder with parabolic bent lower boom) is inserted. The membrane is attached to the skylight arch in linear style and suspended from the supports over a boom edge. The entire skylight arch is roofed with glass. On the station building (at the rear of the square), the membrane is completely clamped over a length of 28 metres. A parabolic bent double arch with a base width of 7 or 12.6 metres forms the membrane end towards the taxi stand and the Central Bus Station. Spiral ropes (diameter 32) are used for the cable edges of the structure. Each double arch is back-tensioned by two fully interlocked spiral cables (diameter 30).

A total base area of 863 m² is roofed, the membrane surface is 1,055 m². The complete textile roofing was supplied to the site in one piece - it was fully pre-fabricated at the Greven-based CENO TEC GmbH plant.



project data

Customer	City of Magdeburg
Membrane Structure	CENO TEC GmbH, Greven
Architecture, execution and steel structure planning	Setzpfand + Lindschulte GmbH & Co. KG, Magdeburg
Membrane planning	IF Ingenieurgemeinschaft Flächentragwerke, Reichenau
Completion	December 2002
Roofed surface	863 sq.m
Membrane surface	1055 sq.m
Membrane type	plastic-coated polyester fabric Type IV with double-sided acrylic final coat (Ferrari® Précontraint 1302)