Cushion roof Max-Planck-Institut

Atrium roof

For the new building of the MPI-SWS in Kaiserslautern, the central atrium was covered with a load-bearing cable net structure in combination with a pneumatic ETFE cushion roof. The roofing of the square base area of 14.6 m x 14.6 m was carried out with only one cushion, the lower layer of which, supported by the cable net, was divided into 36 cushion-like partial areas and the upper layer was divided into 6 arch-shaped partial areas by the support of wind suction cables. The complex interaction of the load-bearing concrete structure, the tubular steel frame, the cable net and the ETFE cushion membrane was statically tested by AR Ingenuere on the overall model.

Project details:

Year: 2011

Location: Kaiserslautern, Germany

Building owner: Max-Planck-Gesellschaft

Client: Temme Obermeier GmbH

Services: Static check, workshop planning with cutting of the foil cushions and ropes

Other parties involved:
Structural design overall construction: Furche Geiger Zimmermann Tragwerksplaner GmbH