AR INGENIEURE

Radom Raisting

Workshop and assembly planning of the membrane envelope

In order to protect the parabolic reflector antenna, which was erected in 1964, from external weather influences, it was encased in a 48.8m diameter and 34m high pneumatically prestressed membrane constructed as a spherical section. Since the replacement envelope erected in 2010 it was destroyed during a storm in February 2020, it has become necessary to erect a new envelope. The new envelope now consists of diagonally running sheets, which reduce its deformation from applied wind loads by up to 30% compared to a vertical sheet. During installation, a pneumatic ring was used at the lower edge of the membrane, which assisted in raising the membrane during retraction so that it could be lowered over the existing antenna without colliding. AR Ingenieure used a virtual collision analysis to determine the position and number of protective elements on the antenna. Furthermore, the design of the seam details and the cuts of the shell were planned. A parametric cutting model enabled their economic determination depending on the width and quantity of the membrane material used.

Project details:

Year: 2021

Location: Raisting, Germany

Building owner: Radom Raisting GmbH

Client: ITF Technical Fabrics GmbH

Services:
Assembly and workshop planning membrane

Other parties involved:
Ingenieurbüro FTR, Architekturbüro Spaenle