A volume of 1810m³, the roof of the bus station is the world’s largest single-chamber membrane air cushion. Four 120m long polyethylene tubes under the road supply the pneumatic air cushion with recirculated clean, dry air, and another four tubes take the air back to the air control unit. Depending on the weather, the entire system comprising support air system, tubing and membrane cushion is maintained by sensors at 300 - 850Pa above the outside air pressure. As only the moisture has to be removed that is diffused over the 2140m² cushion surface, and both the cushion and the tubing are more or less airtight, the roof is highly economical to operate. Immediately after it was commissioned, the bus station canopy was included as an exhibit at the “architektur 0.13” exhibition held in Zurich. Between 26 April and 27 July 2014 the bus station roof can be seen at the exhibition entitled “Bauen mit Luft” (Building with Air) to be held in conjunction with a 10-year retrospective of formTL at the Air Museum in Amberg, Germany.

Name of the project: Bus Station Aarau
Client: Stadt Aarau, Switzerland
Function of the structure: weather protection
Planning and civil engineering: sucisplan Ingenieur AG
Architect: Vehovar & Jauslin Architektur AG
Lighting: Atelier Derrer, Zurich, Switzerland
Structural planning, invitation to tender, workshop planning, construction management: formTL
Contractor for the membrane installation: Ruch AG & Vector Foiltec GmbH
Supplier of the membrane: Nowofol
Material structure: Colour-coated steel structure with a colour coating in C4 (long) & stainless steel spiral cables, cable nodes of anodized aluminium.
Material underground pipes for support air: 8 butt-welded polyethylene tubes of 250mm outer diameter in the supports: stainless steel tubing, 100mm internal diameter
Material membrane: ETFE membrane, 250 µm (clear or dyed blue, and printed by the Reisewitz company)
Dimensions: Eaves height: 7m / Length: approx. 42m / Width: approx. 39m / Height of steel structure: 0.4m / Height of cushion: 1.3 - 3.2m

IASS 2014 The IASS-SLTE 2014 Symposium Shells, Membranes and Spatial Structures: Footprints will encompass the annual IASS Symposium and the 6th Latin American Symposium on Tension Structures. It will take place in Brasilia (Brazil) from 15th to 19th September.