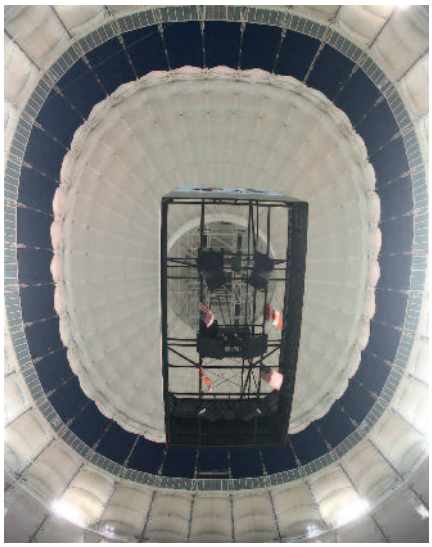
BC Place Stadium roofing

Project. Nearly four years ago it was decided to redesign the now out-of-date 25-year old air-supported roof at BC Place. Although state-of-the-art back in 1983, the roof design had become a hindrance. Profitable bookings had to be declined because of the sealed air configuration resulting in poor ventilation and illumination, and excessive heat/humidity in summer. The largest sports and entertainment facility in British Columbia – the BC Place Stadium in Vancouver – has been revitalized, and is a possible venue for the 2015 Women's World Cup final. The bleachers have been modernized and the air cushion roof replaced by a sunroof, work being completed in late 2011. National and international-level football competitions can be held in the stadium on the new pitch.

Concept/Design. Vancouver's recently revitalized BC Place Stadium already hosted the 2010 Winter Olympics with the new retractable PTFE fabric roof keeping fans sheltered but giving a clear sky view. The new roof made of SEFAR® Architecture TENARA® Fabric 4T40HF was designed for a three tensile membrane system allowing 40% light transmission.

Construction. To open, winches draw the Tenara fabric inwards from all sides, enclosing it in a pod. To close it, the process is reversed, and in winter the retractable roof edge is inflated to create a weather-protective seal at the inner edge of the permanent roof. The transformation takes just 20 minutes with high light transmission providing unparalleled illumination when the roof is closed. Revealing over 7500 sq. meters of sky when open, the retractable roof transforms BC Place into a year-round facility and is a new architectural landmark for the province. The cable-supported roof is the biggest of its kind in the world, creating the ideal atmosphere for any event – summer festivals, evening football games, indoor exhibitions – all protected from the rain. The blue-sky opening (100 m x 85 m) is the same size as the field below. Support masts are 47 meters tall, and the structure is like eighteen 200-meter suspension bridges. Energy savings amount to 25% (or about $350,000 per year).

Project/Location: BC Place Stadium Vancouver, Canada, www.bcplace.com
Owner: BC Pavilion Corporation (PavCo), Canada, www.bcpavco.com
Architect: Stantec Architecture Ltd, USA, www.stantec.com
Engineering and roof design: Geiger Engineers, Suffern NY, USA, www.geigerengineers.com
Schlaich Bergermann and Partner LP, NY, USA, www.sbp.de (Consultants to Geiger Engineers)
Implementation/Design (retractable tenara roof): Hightex GmbH, Rimsting, Germany, www.hightexworld.com
General contractor: PCL Constructors Westcoast Inc., Canada, www.westcoast.pcl.com
Fabric: SEFAR® Architecture TENARA® Fabric 4T40HF
Photos: David Campbell, Geiger Engineers, Suffern NY, USA, www.geigerengineers.com



Architecture
Interior / Exterior

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