

Contact author: Gianfranco Bronzini, g.bronzini@bluewin.ch

SWISS SCIENCE CENTER TECHNORAMA, WINTERTHUR

The new Park and the Bridges

Authors: Gianfranco Bronzini¹, Tino Rizzi²

Affiliation: ¹ CEO, project leader Conzett Bronzini Partner, structural engineers, Chur, Switzerland – g.bronzini@cbp.ch

² Project leader, Conzett Bronzini Partner, structural engineers, Chur, Switzerland – t.rizzi@cbp.ch

Co-Authors Swiss Science Center Technorama, SIA – swiss society of engineers and architects,
Park: Krebs und Herde GmbH – landscape architect, Hunziker Betatech AG – plant management

Keywords

Young talent promotion project for civil engineers, bridge as an essential part of the park concept, bridge as mega exhibit, bridge as carrier of exhibits, adjustable suspension bridge

Context

The Swiss Science Center Technorama in Winterthur, Switzerland is building a new Science Park on an area of 15,000 m², with completely new paths, vegetation and water surfaces, creating space for numerous new exhibits, art works and experimental possibilities.

At the heart of the new park is the «Wunderbrücke» (Marvel Bridge), co-developed by the SIA (Swiss Association of Engineers and Architects) as a large experimental platform with unusual engineering components, and the «Hängebrücke», an adjustable suspension bridge, to illustrate the vibration behaviour of structures.

«Wunderbrücke»

The «Wunderbrücke» forms a 130 m long platform at a height of 10.5 -17 m, which offers generous space for exhibits, experiences and relaxation. This extraordinary height, mostly above the trees, opens the view to the mountains and allows a variety of experiments.

Access is primarily provided at two points in the park. Four wide stairs with different inclinations lead visitors up to the platform. With the help of an elevator, the uppermost level can also be reached without obstruction.

The 5.9 m wide platform can be flexibly equipped with a wide variety of exhibits. A cantilever platform and a glass floor allow visitors to experience the height intensely. A water circuit carries water to the top of the platform and let it flow down in two laterally arranged open channels to the lower platform end. There it is stored in a small bin and, at intervals, 5 tons of water suddenly drop down into a basin (half pipe) in the park, thus creating a rejecting surge.

The steel structure of the «Wunderbrücke» refers to the Swiss building culture with its many iron railway bridges and buildings. Furthermore, it creates a unique spatial structure that allows experiencing a work of civil engineering from near and far, from inside and outside. The stair treads and the platform floor are provided in wood.

«Hängebrücke»

The «Hängebrücke» is a suspension bridge over the Riedbach, is supported by two cables and spans 17 m. It is intended to let the young audience experience the swinging behaviour of a rope bridge in different positions. To achieve this, the cable can be lengthened or shortened by means of an electrically driven motor. The rope tension and the sag are thus changed, which leads to a noticeable effect on the vibration