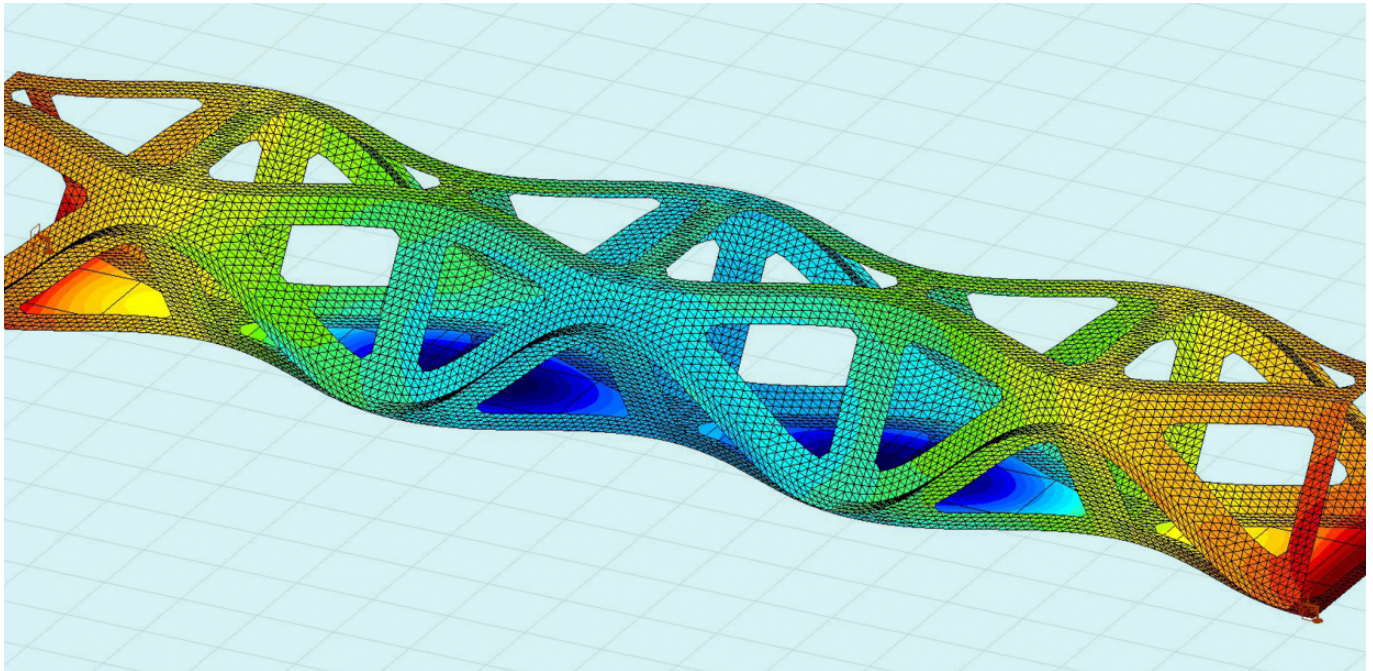


Pedestrian bridge made of carbon fibers



It will not be long before pedestrians are able to cross Lake Lugano between Melide and Bissone on a bridge made of carbon-fiber-reinforced polymer (CFRP). EBP is responsible for the engineering behind this innovative bridge.

Bridges have already been built across the narrow part of Lake Lugano between Melide and Bissone for the inter-cantonal highway, a local cantonal access road and the railway. A distinctly innovative pedestrian bridge is now to accommodate the needs of pedestrians wishing to cross between the two municipalities. The new, 18-meter footbridge is made entirely of carbon-fiber-reinforced polymer (CFRP). Constructed of twelve nearly identical modules, the bridge distinguishes itself in terms of its elegantly curved form, the spectacular views it creates and affords and its extraordinarily slender components, which feature a wall thickness of only 3 to 4 cm.

The architect Filippo Broggini's original idea of building a modular bridge made of CFRP components was developed in the context of a CTI project undertaken at the University of Applied Sciences and Arts of Southern Switzerland (SUPSI). Those involved in the project were then able to win the support of the Canton of Ticino, which has agreed to sponsor the first application of Broggini's idea to realize the new pedestrian link between Melide and Bissone. The bridge itself, however, has proved to be a major challenge, both in terms of its manufacture and the required structural analysis.

In light of these challenges, EBP was commissioned to develop the corresponding structural models and to calculate the structural load-bearing specifications. Indeed, EBP was able to present a solution to the inspecting engineer that manages the

Client

Canton of Ticino / University of Applied Sciences and Arts of Southern Switzerland (SUPSI)

Facts

Period	2014 - 2018
Project Country	Switzerland

Contact persons

Daniel Rüegg
daniel.rueegg@ebp.ch

Christoph Haas
christoph.haas@ebp.ch

complexity of the finite-element model while at the same time taking account of all of the essential effects. The scope of EBP's assignment has also included working together with SUPSI to develop solutions to numerous technical and design problems, with a number of challenges still to be overcome before the project is completed.