Guldhubelbrüggli – A new symbolic and innovative bicycle bridge in Brügg

Two bicycle and pedestrian bridges are planned as part of the development area in Brügg, where the new Biel Hospital Centre and Erlenpark will be established. The first one will span the A6 motorway, while the second one will cross the Nidau-Büren Canal, extending the cantonal cycle priority route. Focus of this work is the preliminary design of the second bridge.

Pedestrian bridges are intended for slow traffic and can aspire to a higher and more prestigious function, assuming a **symbolic value** and architectural depth. They aim to provide users with an immersive experience, making the route a centre of attraction.

The client requested a footbridge with a usable width of 6.5 m and a structure capable of **blending harmoniously into the landscape**, while at the same time maintaining a strong attractive value for users. Four structural variants were examined to identify the optimal design.

Biel, as a **bilingual city**, inspired the symbolic aspect of the bridge. Indeed, the mast, which symbolises unity, connects the slab, transitioning from two initial elements to one cohesive structure. Without this unity, the structure (metaphorically representing society) would not function.

The bridge is designed as a **back-anchored single-sided suspension bridge** and has a span of 76 m. The deck lies on steel cross girders that cantilever on both sides and are suspended visibly.

The use of a single mast was one of the main reasons for choosing this variant. It is placed on the north bank of the river, where there are large residential buildings, while leaving the south bank untouched with its **natural areas** of fields and meadows. In this way, the environmental impact is more contained.
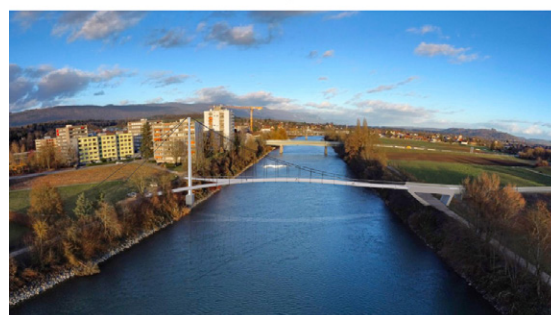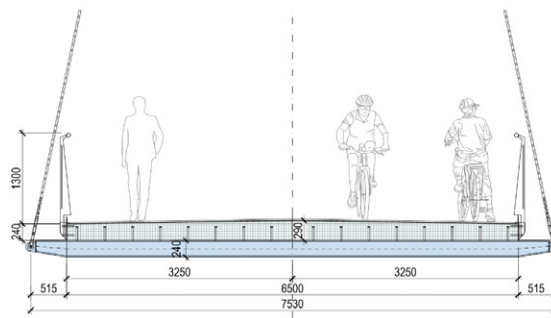
One of the key challenges of the project was the search for the **optimal form** of the main cable, which was also made possible using non-linear calculations.

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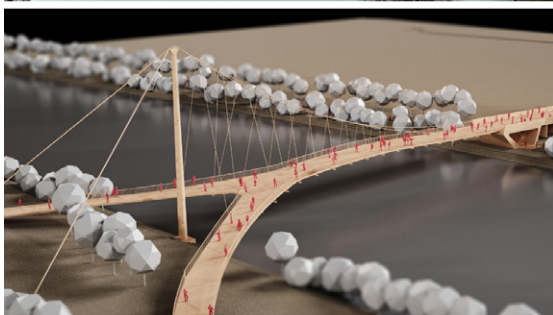
Rendering of the footbridge seen from the east (above) and model of the bridge (below)

Cross-section of the deck (above) and rendering from the west with a bird's eye view (below)