



Conceptual Bridge Design beyond Signature Structures

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Abstract

The present paper outlines important aspects of the collaboration in interdisciplinary bridge design teams, using some of the authors' recent successful projects as illustrative examples. It is emphasized that design competitions have significantly contributed to the fact that in Switzerland – contrary to international tendencies – hardly any sculptural, inefficient and excessively expensive bridges were built over the past decades, while aesthetic criteria and innovative approaches are appreciated even in the design of minor bridges and civil engineering structures.

Keywords: Bridges, bridge design, conceptual design, design competitions, signature structures.

1 Swiss Tradition of Bridge Design

Conceptual bridge design has a long-lasting tradition in Switzerland. Engineers like Robert Maillart, Alexandre Sarrasin and Christian Menn (Figures 1-3) significantly contributed to the evolution of today's international state-of-art in bridge design and technology and to the recognition of the cultural value of modern engineering structures.

More than 30 years ago, Billington [1] introduced the terms *efficiency*, *economy* and *elegance* as common denominator of their approach to bridge design and promoted it as an ideal alternative to the countless anonymous, often ugly utility structures based on purely technical and economic criteria.



Figure 1. Salginatobelbrücke, R. Maillart, 1930 [2]



Figure 2. Pont du Gueuroz, A. Sarrasin, 1934 [2]