

Aesthetic considerations in the design of the 200-year bridge

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1 Abstract

Evolution in materials, together with developments in instrumentation and monitoring techniques, have made it possible to think on systematically designing bridges that have a significantly longer service life than what is currently required in the standards. Exciting discussions about 200-year bridges are taking place nowadays, fundamentally focusing on durability, maintenance, and prediction of future use. However, there is another fundamental aspect that is probably not receiving so much attention: how 200-year bridges should look like?

This article is a reflection on how the design of 200-year bridges should be faced in terms of appearance. On what parameters can make a bridge a long-lasting valuable piece of the built environment or just a representative of what was in fashion in a specific period. On how to achieve a perceived design quality that can span different generations. On appearance durability.

The article includes an analysis of a series of historic bridges, some of them more than 200 years old, with the aim of identifying what has made them successful (or not) from an aesthetic point of view, to reflect on how to apply these lessons learnt in the design of new bridges with an extended service life.

Keywords: bridge; design; history; 200-year service life; aesthetics; appearance durability; fashion

2 Introduction

Bridges are a paradigmatic case of human transformation of nature. They are symbols union, progress and often innovation, which defy gravity and alter landscapes. They bind communities, acting as connectors of people, inviting interaction and integration. The design of such emotional, prominent and long-lasting constructions should go beyond their main function as pieces of infrastructure that link areas. They should always aspire to improve the quality of the built world.

That is why bridge design is a thrilling challenge that comes with great responsibility. The responsibility of designing structures that, during long service lives, will be cross and perceived by countless people, whose experience will be determined by the quality of the work done on the design and construction of these bridges.

The 100 to 120-year service life expected for bridges nowadays, a time period that is already too long for bad design, is being challenged thanks to the evolution in materials or instrumentation and