

Structural - Architectural Approach to Bridge Design

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Summary

Serving to community, they are often exposed to public judgement, especially city bridges, which are continuously seen by many viewers on the bridge and from the different angles in urban setting. Therefore, it is necessary to design not only reliable, durable and economical bridges, but also aesthetically pleasant structures. To design the bridge as a new city landmark, which meets the requirements of large traffic volumes of vehicles and light urban railway as well as intensive but comfortable pedestrian transport, a new approach to bridge design is required.

Structural-architectural approach, illustrated by beautiful bridges, which harmoniously fit into the urban environment on decent (Trogir Bridge) or representative (new bridges in Zagreb) way, designed by Bridge Division at Faculty of Civil Engineering - University of Zagreb, will be shown in this paper. Respecting the known aesthetics values, for Bundek Bridge a unique structure is formed, which is already applied in the new airport terminal design, but it can be also transformed for other future landmark buildings, e.g. central metro station, as a modern style of the 21st century Croatian capital.

Keywords: aesthetic, city bridge, structural art, environment integration, unique structure, city landmark

1. Introduction

Bridges are exceptional structures. Comparing with buildings and other infrastructures, bridges are dominant in the environment not only by their dimensions, but also by their service life and the number of users during it. They serve to community and can be seen from different location (on/under the bridge, from close up, faraway, from other roads) and in different conditions (standing, moving: at varying speed and in a variety of vehicles). Consequently, it is not surprising that bridge engineering is often exposed to public judgement, more than other professions. Therefore, it is necessary to design not only reliable, durable and economical bridges, but also aesthetically pleasant structures.

To design the bridge as a new city landmark, which meets the requirements of large traffic volumes of vehicles and light urban railway as well as intensive but comfortable pedestrian transport, a new approach to bridge design is required. Structural-architectural approach, illustrated by beautiful bridges, which harmoniously fit into the urban environment on decent (Trogir Bridge) or representative (new bridges in Zagreb) way, designed by Bridge Division at Faculty of Civil Engineering - University of Zagreb, will be shown in this paper.