

New Bridge across Sava River in the Scope of Belgrade Inner Semi-Ring Road

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Summary

The paper deals with new bridge across Sava River in Belgrade, with an overall length of 967 m, at the lower tip of Ada Island as a part of the inner city semi-ring road. The bridge deck, having width of 45 m, carries 6 lanes of vehicular traffic, 2 rail tracks of LRT and two lanes of pedestrian/ cycleway. The main bridge part is an asymmetric cable-stayed structure, with a main span of 376 m and a back span of 200 m. The unique single pylon in the form of sharp cone is 200 m high. The stays of fan-type configuration are in two quasi-middle planes. The aesthetics plays a major role in bridge design to be a meeting point for engineering and architecture. The Ada Bridge will have an original architectural appearance well incorporated in the city environment. As the awarded design-build Contractor started the works by middle 2008, it is planned to end the works in autumn 2011. The Sava Bridge is the largest bridge currently under construction in Europe.

Keywords: cable-stayed bridge; bridge architecture; bridge structure; urban traffic

1. Introduction

In order to reduce traffic congestion in Belgrade city and increase the capacity of the network, it is under construction new bridge across Sava River, passing over the lower tip of Ada Ciganlija Island. As a part of the future Inner City Semi-Ring Road, the Sava Bridge serves for the distribution of traffic flows between diametric peripheral city zones, and operationally connected to the city highway, it shall allow diversions of highway flows to the Inner City Semi-Ring Road and vice versa.

The general design, with the previous feasibility study of Inner City Semi-Ring Road, was made in 2003. The international competition for concept design proposal was launched in 2004 by client - City of Belgrade i.e. Belgrade Land Development Public Agency. The awarded concept designer Ponting Maribor (with DDC Ljubljana & CPV Novi Sad) finalized preliminary design in 2006 [1].

Louis Berger Group Inc. (with local partner Euro Gardi Group Novi Sad), as the awarded Project Manager – Engineer, started in 2007 [2]. The consortium POOR-SCT-DSD, as the awarded design-build Contractor, started the works by middle 2008 and it is planned to end in autumn 2011. The main design is prepared by LAP Stuttgart (with DCF Vienna - foundation design) [3]. The entire project is financed by EBRD and City of Belgrade. The client is City of Belgrade.

The Sava Bridge with its communications, shall contribute to the Belgrade look as a proper European metropolis. This is the largest bridge project currently under construction in Europe.

2. Belgrade bridges, traffic and project of Inner City Semi-Ring Road

Belgrade, as the capital town with a population of 2 million, and transit center of the routes connecting the middle and west Europe from one side to the southeast Europe and Middle East to the other side, needs urgently the new bridges. Belgrade occupies a central place in the economic, political and social fabric of Serbia, generating nearly 40% of the GDP of Serbia. As a result measures