



Bridge over the Vistula River in Kamień, Poland

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Abstract

The article describes the design and construction of a newly built road bridge over the Vistula River in Kamień in south-east Poland. Key features of design and construction of the iconic, over 1km long structure are presented. Construction commenced in September 2012 and was completed in May 2015.

Keywords: Vistula, road bridge, Kamień, pile base injection, BSP piles, Vibro_Fundex piles, Natura 2000, steel-composite box structure, fibro-concrete, incremental launching, orthotropic



Figure 1. Original visualisation of the bridge

1 Introduction

1.1 Client, Designer, Contractor

CH2M was commissioned by the State-owned Client (Administration of Regional Roads in Lublin) to design a new, more than 1 km long road bridge over the Vistula River in Kamień along national road no. 747.

The design phase commenced in 2010 and was completed in 2012. The contract included: design of a new bridge, renovation design of several jetties and a longitudinal dam and design of the local road system. The scope of design work included: conceptual design (preliminary design including optimization), building permit design and the detail design, steel fabrication design, maintenance manual, tender documentation (bill of quantities, cost estimate and Technical Specifications). The CH2M design documentation

provided the basis for the tender for construction works. It also offered tenderers the opportunity for value engineering and modifications to the design to suit the tenderer's preferred technology. The successful tenderer subsequently appointed CH2M to develop an alternative design of the superstructure and the foundations.

The construction of this new bridge was carried out by two companies: Energopol Szczecin and Gotowski BKiP. Entire cost of construction, including approach roads was 67.5 million USD.

1.2 Environmental issues

Vistula is the longest and widest river in Poland and the eighth longest river in Europe. It is 1092m long and has a 194000 km² catchment area. Nowadays it is full of shallows and islands and water transport is only local and periodic. The river is very diverse in terms of its morphology and natural conditions. The river is wide with a