

 **Bridges****Reference Details:**

**Licensor** Grad Zagreb  
(City of Zagreb), Croatia  
+++ **Concession Agent**  
Zagrebacke otpadne  
vode d.o.o. DRUSTVO  
SASTAVLJENO OD:

SHW Hölter  
Wassertechnik GmbH -  
RWE AQUA GmbH -  
Vodopriveda Zagreb  
d.o.o., Zagreb, Croatia  
+++ **Comission Agent**

SHW /RWE Aqua  
Vodogradnja d.o.o.  
DRU?STVO  
SASTAVLJENO OD:  
SHW Hölter  
Wassertechnik GmbH -  
RWE AQUA GmbH -  
Vodopriveda Zagreb  
d.o.o., Zagreb, Croatia  
+++ **General**

**Contractor**  
INDUSTROGRADNJA  
d.d., Zagreb, Croatia  
and ALPINE BAU  
ZAGREB d.o.o., Croatia  
(for the 120 m main  
span only) +++

**Designer** Dipl. Ing. Mrs.  
Rajka Veverka and Dipl.  
Ing. Mr. Martina Balić,  
Zagreb, Croatia

**DSI Unit** DSI Group HQ  
Operations, Munich,  
Germany

**DSI Services** Supply of  
146 t DYWIDAG Stay  
Cables (32 stays with  
DYNA Bond®)

**DYWIDAG Stay Cable and Prestressing Systems incorporated into a traffic and pipeline Bridge in Zagreb****"Domovinski Most over the River Sava, Zagreb, Croatia**

The City of Zagreb lies on both sides of the Sava River. The river is heavily contaminated because the wastewater from this growing city with a population of 900,000 and the growing industrial zone on the left bank near the airport has up to now been discharged directly into the river. In 2001 the City of Zagreb decided to build its first ever wastewater treatment plant on the left bank of the river which was determined to be the most appropriate location, making it possible to treat municipal wastewater according to current EU standards.

The project, co-financed by EBRD (European Bank for Reconstruction and Development) and KfW (Kreditanstalt für Wiederaufbau, the German government development bank) and planed on a BOT basis for 28 years, incorporates not only the wastewater treatment plant, it also includes the supporting infrastructure such as access roads, collecting pipelines, and a bridge across the river.

This 840 m long "Domovinski" Bridge will not only ease traffic congestion between the inner city and the industrial and airport area on the other side of the river, it will also carry two water pipelines. One will transport the waste water from the inner city to the new wastewater treatment plant and the other will supply the growing areas of the left bank of the river with drinking water as the drinking water pumping sites are located on the right bank.

The bridge's superstructure was designed as a continuously prestressed five-cell hollow box girder. The superstructure is prestressed in the webs with 15x0.62" strand tendons, in the diaphragms with 12x0.62" strand tendons and in the deck slab in transverse direction with unbonded 0.6" monostrand tendons. The superstructure is 34 m wide because the city's development plan required that the bridge deck provided enough space for a double-track tramway line, two separate double traffic lanes, as well as a footpath and a bicycle lane on each side.

The bridge has spans of 48 m + 6x60 m + 72 m + 120 m + 72 m + 2x60 m + 48 m which also cross the former flood plain. The main span of 120 m across the river is constructed using the free cantilever method. A total of 2x8 pairs of DYWIDAG Stay Cables consisting of 48x15.7 mm strands are used to carry the total load of the bridge deck. All approach spans were constructed span by span on scaffolding. The completion of the entire project is scheduled for the second half of 2006.

Anchorage DB-P48  
and Saddles), 700 t  
Strand Tendons, Type  
MA with 12 and  
15x0.62" and 60 t  
unbonded Monostrand  
Tendons x 0.6", Rental  
of Special Equipment  
and Technical  
Assistance for  
Installation.

[www.dywidag-systems.com](http://www.dywidag-systems.com)