



▲ Construction of a soil bund in the river enabled the deck to be built on temporary supports.

The new southern part of Astana is connected to the old city centre by the Ramstore Arch Bridge, which crosses the River Ishim.

The arch crosses diagonally over the 33m-wide steel deck with a span length of 180m. Suspension is achieved using 20 stay cables that vary in size from 6-12 to 6-55. Their lengths range from 26.1m to 52.7m.

VSL's scope was to detail the cable-stay system, supply both the stay cable materials and installation equipment and provide technical assistance for the installation.

Scope of works performed

- Detailing of the stay system
- Supply of stay cable materials
- Supply of the installation equipment
- Provision of the technical assistance required for the stay cable installation

The segments for the steel arch were prefabricated and assembled one by one using a lifting frame.

A soil bund was built in the river to enable the deck segments to be supported on a temporary steel structure.

Key reasons for choosing VSL's SSI 2000 stay cable system were that it is fully prefabricated in a quality-controlled workshop and provides high fatigue resistance. Each strand is equipped with its own individual multi-layer safeguard to increase corrosion protection. The system also caters for any possible future need to re-tension or de-tension the cables.

The stay cables were installed by the single strand method using two winches, one on each end of the arch. The winch cable was guided by rollers inside the arch until it reached the anchorage locations.

The project required the use of galvanised, greased strands together with tightly extruded HDPE ducting,

giving triple-layer protection against corrosion.

More than 33t of strands were installed between October and November 2008.



▲ SSI 2000 anchorages were fitted in the arch.



▲ SSI 2000 anchorages were also used in the deck.



▲ The bridge's arch spans diagonally over the 180m-span deck.



▲ HDPE pipes form part of the triple-layered corrosion protection system.

PROJECT
Ramstore Bridge

OWNER
Astana City Government Road &
Transport Department

MAIN CONTRACTOR
Taasyapi AS

ENGINEER
Mostovik

VSL ENTITY
VSL (Switzerland) Ltd.

DATE
2008



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