



BRIDGES OF VLADIVOSTOK



SC Institute Giprostroymost – St. Petersburg is widely recognized for solution of complex challenges with a lot of ingenuity involved. For each project development innovative solutions are implemented, which then often become the mainstay of transport infrastructure construction. Such an innovative approach produces truly unique structures that combine cutting-edge technologies, economic effectiveness and a distinctive architectural appearance.

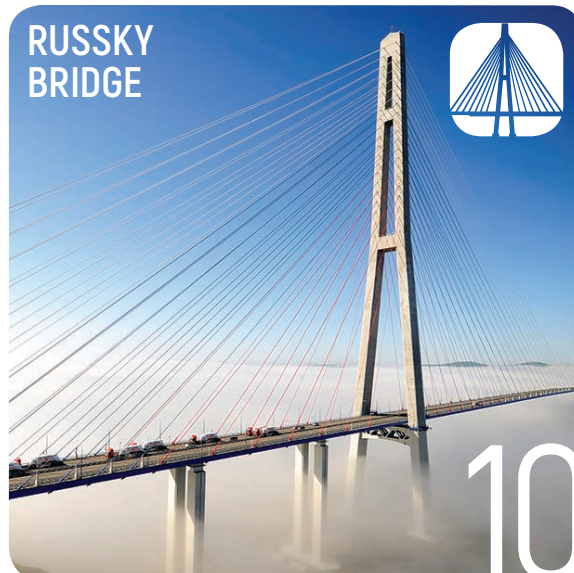
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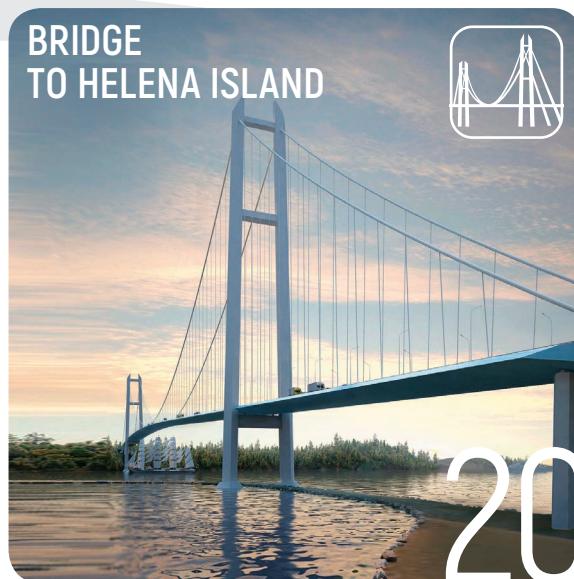
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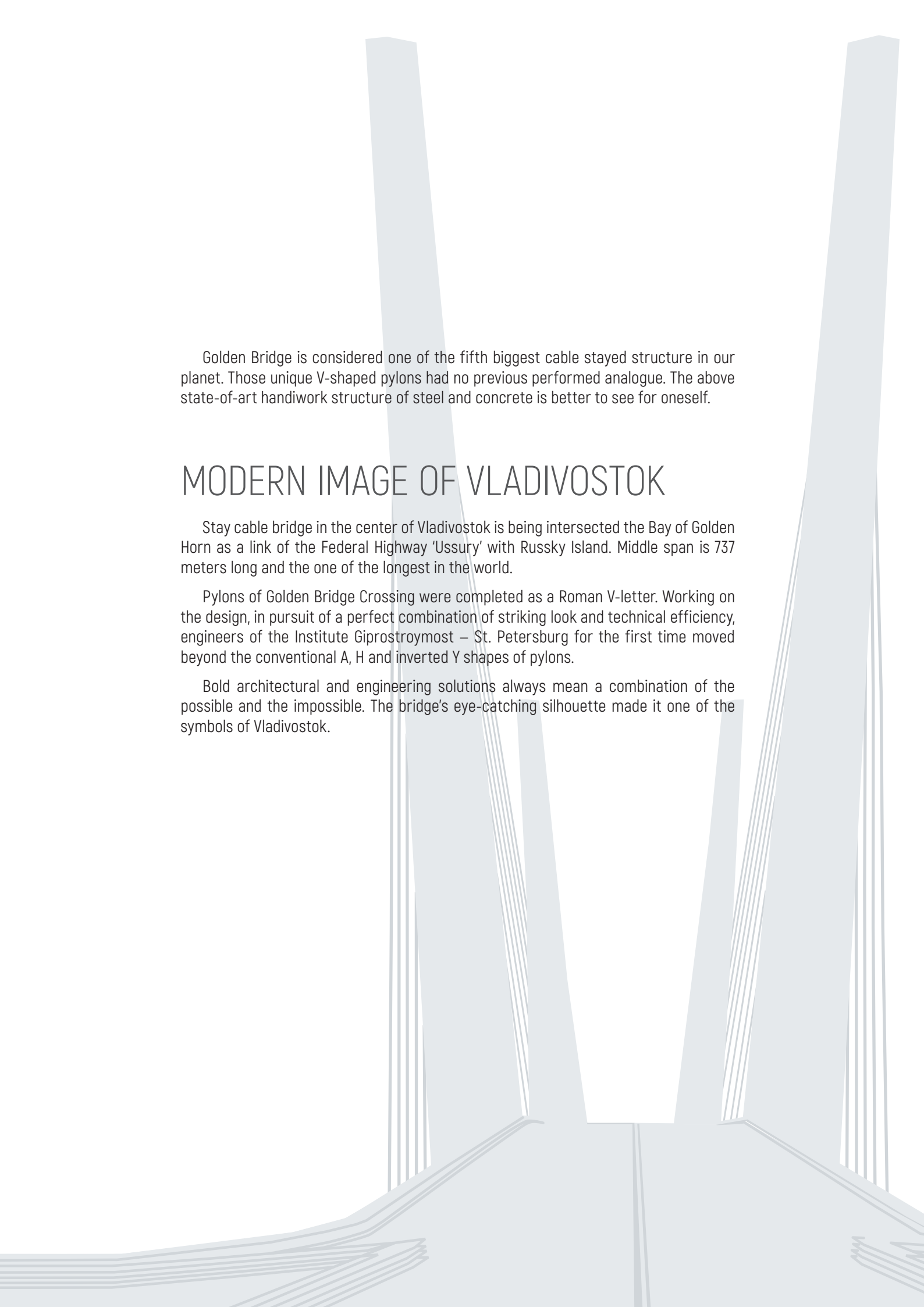
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GOLDEN BRIDGE





Golden Bridge is considered one of the fifth biggest cable stayed structure in our planet. Those unique V-shaped pylons had no previous performed analogue. The above state-of-art handiwork structure of steel and concrete is better to see for oneself.

MODERN IMAGE OF VLADIVOSTOK

Stay cable bridge in the center of Vladivostok is being intersected the Bay of Golden Horn as a link of the Federal Highway 'Ussury' with Russky Island. Middle span is 737 meters long and the one of the longest in the world.

Pylons of Golden Bridge Crossing were completed as a Roman V-letter. Working on the design, in pursuit of a perfect combination of striking look and technical efficiency, engineers of the Institute Giprostroymost – St. Petersburg for the first time moved beyond the conventional A, H and inverted Y shapes of pylons.

Bold architectural and engineering solutions always mean a combination of the possible and the impossible. The bridge's eye-catching silhouette made it one of the symbols of Vladivostok.





GOLDEN HORN CABLE-STAYED BRIDGE, VLADIVOSTOK, RUSSIA

DESCRIPTION:

Bridge Crossing over the Federal motorway M-60 'Ussury' Khabarovsk – Vladivostok – Russky Island.

Crowned in city center near Gogolya and Nekrasovskaya Streets in Southern part plus Kalinina Street in Northern part of the city. Total length of bridge crossing is 2.1 km.

- bridge schema: 45+100+2x90+737+2x90+100+45 m
- main span – steel 737 m
- anchor span – prestressed cast in-situ concrete
- total length – 1,387 m
- pylons height – 227 m
- main span – 737 m
- underwater clearance – 60 m
- girder width between barriers – 29.4 m
- girder height – 3.5 m
- weight of stays – 1,845 t
- overpass total area – 43,030 m²

SC INSTITUTE GIPOSTROYMOST – ST. PETERSBURG LIST OF WORKS:

'Design Documentation' Stage:

- fulfillment of design works as a subcontractor bridge construction design
- passing of Federal Expertise

'Work Documentation' Stage:

- general design
- total main structures design
- SAC&D and MS development
- financial estimates
- technical supervision

GENERAL DESIGN:

SC Institute Giprostroymost – St. Petersburg

CLIENT:

Primorskiy Kray Road Department

GENERAL CONTRACTOR:

TMK Ltd

DESIGN STAGE:

'Design Documentation' Stage: 2006 – 2008

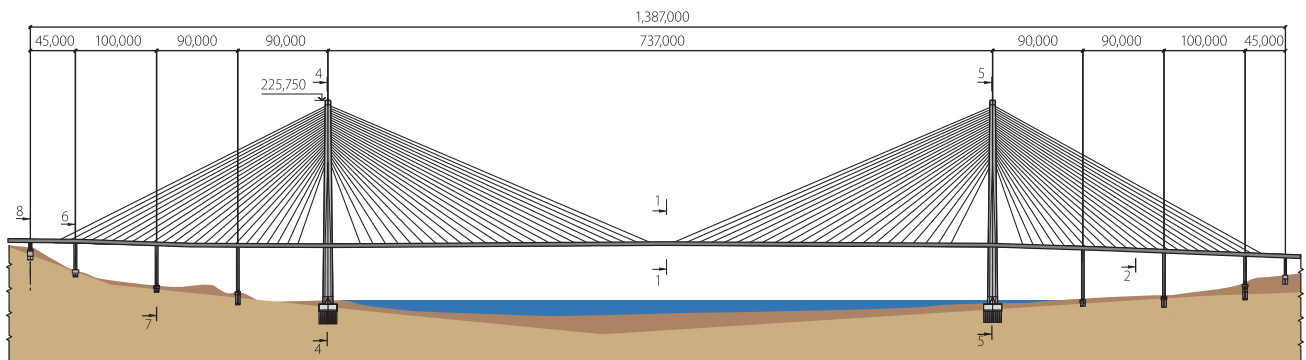
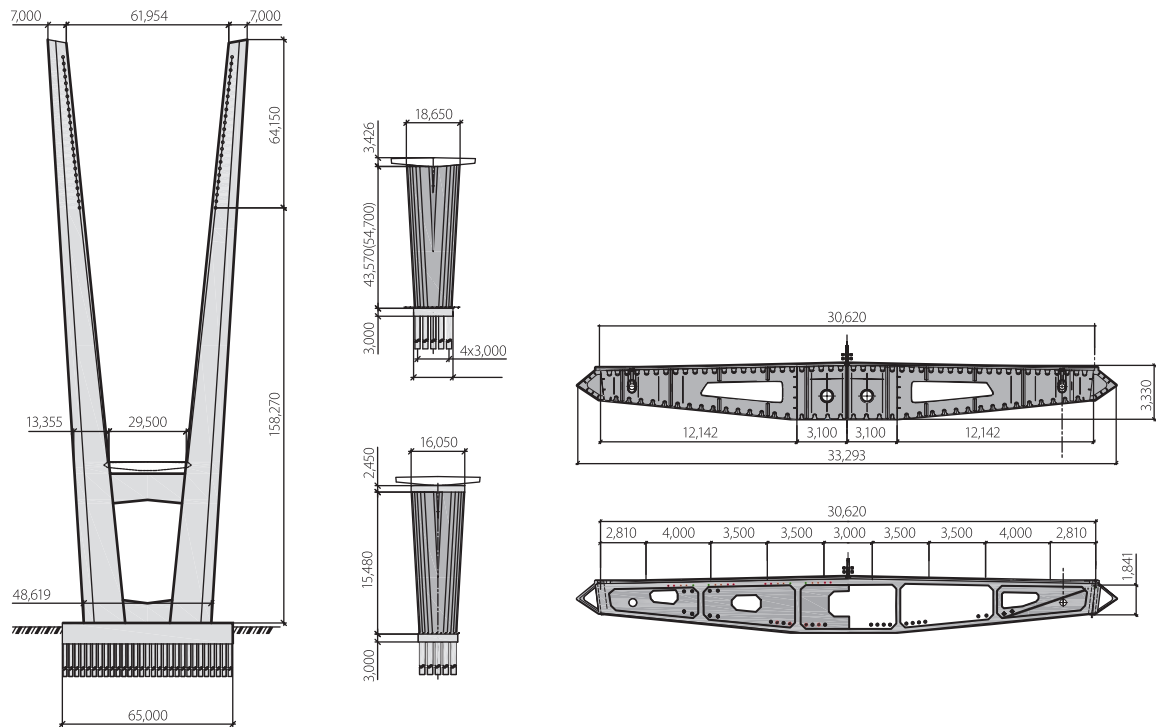
'Work Documentation' Stage: 2008 – 2010

CONSTRUCTION STAGE:

2008 – 2012

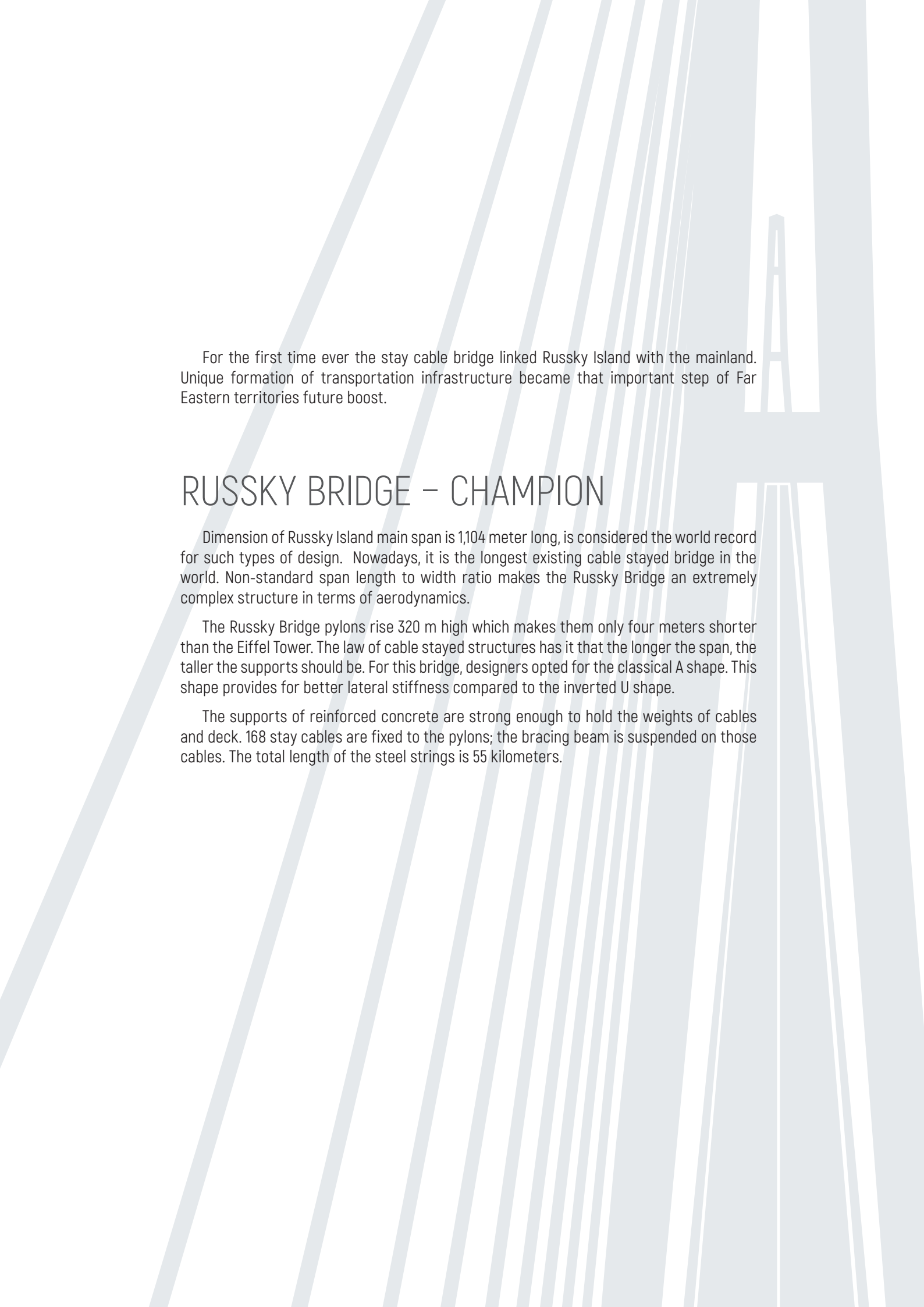


BRIDGE DIAGRAM



RUSSKY BRIDGE





For the first time ever the stay cable bridge linked Russky Island with the mainland. Unique formation of transportation infrastructure became that important step of Far Eastern territories future boost.

RUSSKY BRIDGE – CHAMPION

Dimension of Russky Island main span is 1,104 meter long, is considered the world record for such types of design. Nowadays, it is the longest existing cable stayed bridge in the world. Non-standard span length to width ratio makes the Russky Bridge an extremely complex structure in terms of aerodynamics.

The Russky Bridge pylons rise 320 m high which makes them only four meters shorter than the Eiffel Tower. The law of cable stayed structures has it that the longer the span, the taller the supports should be. For this bridge, designers opted for the classical A shape. This shape provides for better lateral stiffness compared to the inverted U shape.

The supports of reinforced concrete are strong enough to hold the weights of cables and deck. 168 stay cables are fixed to the pylons; the bracing beam is suspended on those cables. The total length of the steel strings is 55 kilometers.





CABLE-STAYED BRIDGE RUSSKY, VLADIVOSTOK, RUSSIA

DESCRIPTION:

Cable-stayed bridge on Russky island, Vladivostok. One of the world biggest cable-stayed crossing of 1,104 m with the highest pylons and longest stay cables ever build currently.

- bridge diagram: 60+72+3x84+1104+3x84+72+60 m
- total bridge length – 1,885.53 m
- total length with approaches – 3,100 m
- main span – 1,104 m
- deck width – 29.5 m
- carriageway width – 23.8 m
- number of lanes – 4 (2 per one way)
- clearance – 70 m
- number of pylons – 2
- pylon's height – 320.9 m
- number of stays – 168 pcs
- longest stay cable – 578.08 m
- shortest stay cable – 181.32 m

SC INSTITUTE GIPROSTROYMOST – ST. PETERSBURG LIST OF WORKS:

- design of project stage
- design of SAC&D, main structures
- aerodynamic tests
- control of technical decisious
- verification analysis

CLIENT:

Road Administration of Primorskiy Kray
Rosavtodor, Mostovik

GENERAL CONTRACTOR:

JSC USK Most

DESIGN PERIOD:

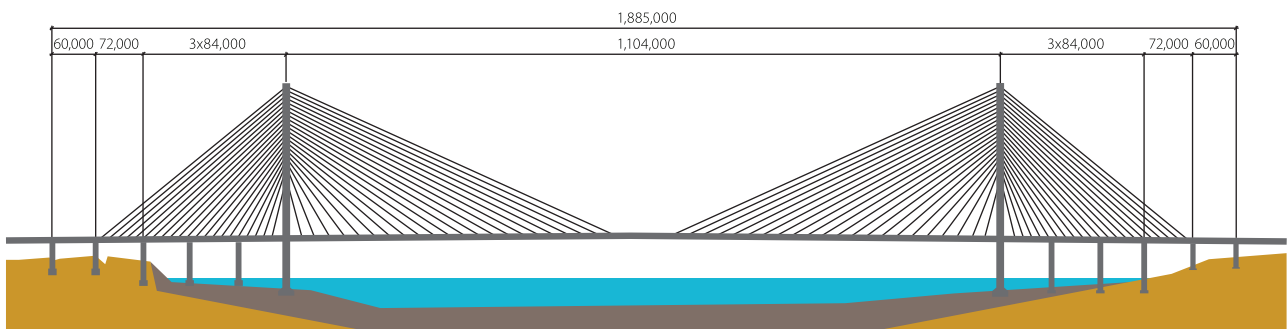
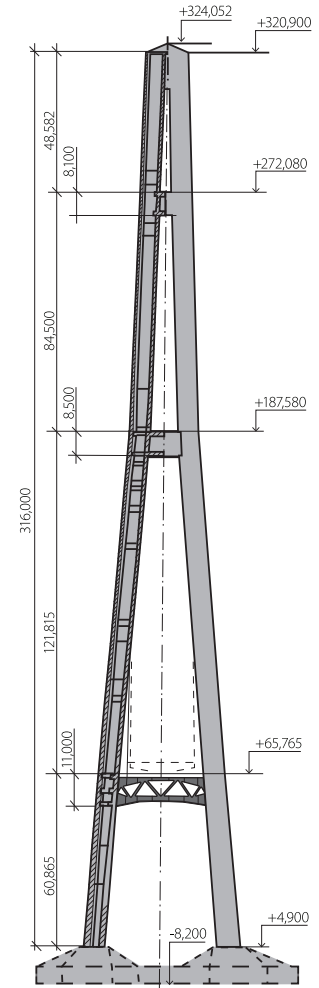
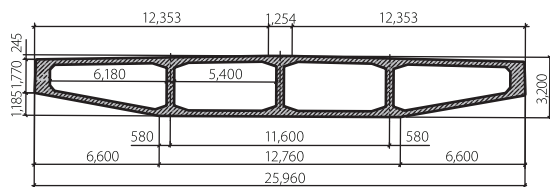
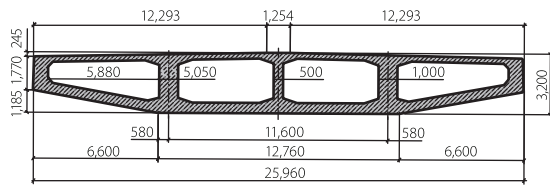
2008 – 2012

CONSTRUCTION PERIOD:

2009 – 2012



BRIDGE DIAGRAM





LOW-WATER BRIDGE OVER THE AMURSKY GULF, VLADIVOSTOK, RUSSIA

Causeway of 4,364 meters long across the Amursky Gulf is a part of new highway - 'Noviy Township-De-Friz-Sedanka-Patrocl'. The entire length of that completed structure is about 40 kilometers long. The bridge became the last construction site of the new highway being opened to service.

Presence of brand new road artery helps a lot to unclog our Federal Motorway Khabarovsk Vladivostok as a detour of famous recreation zone of Muraviev-Amursky Peninsula. Thanks to new bridge crossing the traffic capacity of the city approaches has doubled against the last year.

DESCRIPTION:

City bridge in Vladivostok city connecting Peninsula De-Friz with Sedanka settlement.

- bridge diagram: 16 continuous composite RC girders with each panel per 273.8 m long
- bridge schema: 42.4+3x63+42.4 m
- width – 23.88 m
- clearance – 2(10)
- sidewalks – 2x1.0 m

SC INSTITUTE GIPOSTROYMOST – SAINT-PETERSBURG

LIST OF WORKS:

'Work Documentation' Stage:

- general design
- total main structures design
- design of motorway with junction
- underground pedestrian crossings design
- SAC&D, construction technology and MS design
- illumination and power supply arrangement
- sewage facilities completion
- utilities network rearrangement
- heating boilers modification
- technical supervision
- Federal Expertise passing

GENERAL DESIGN:

SC Institute Giprostroymost – St. Petersburg

CLIENT:

Department of Road Section of Primorskiy Kray

GENERAL CONTRACTOR:

TMK Ltd

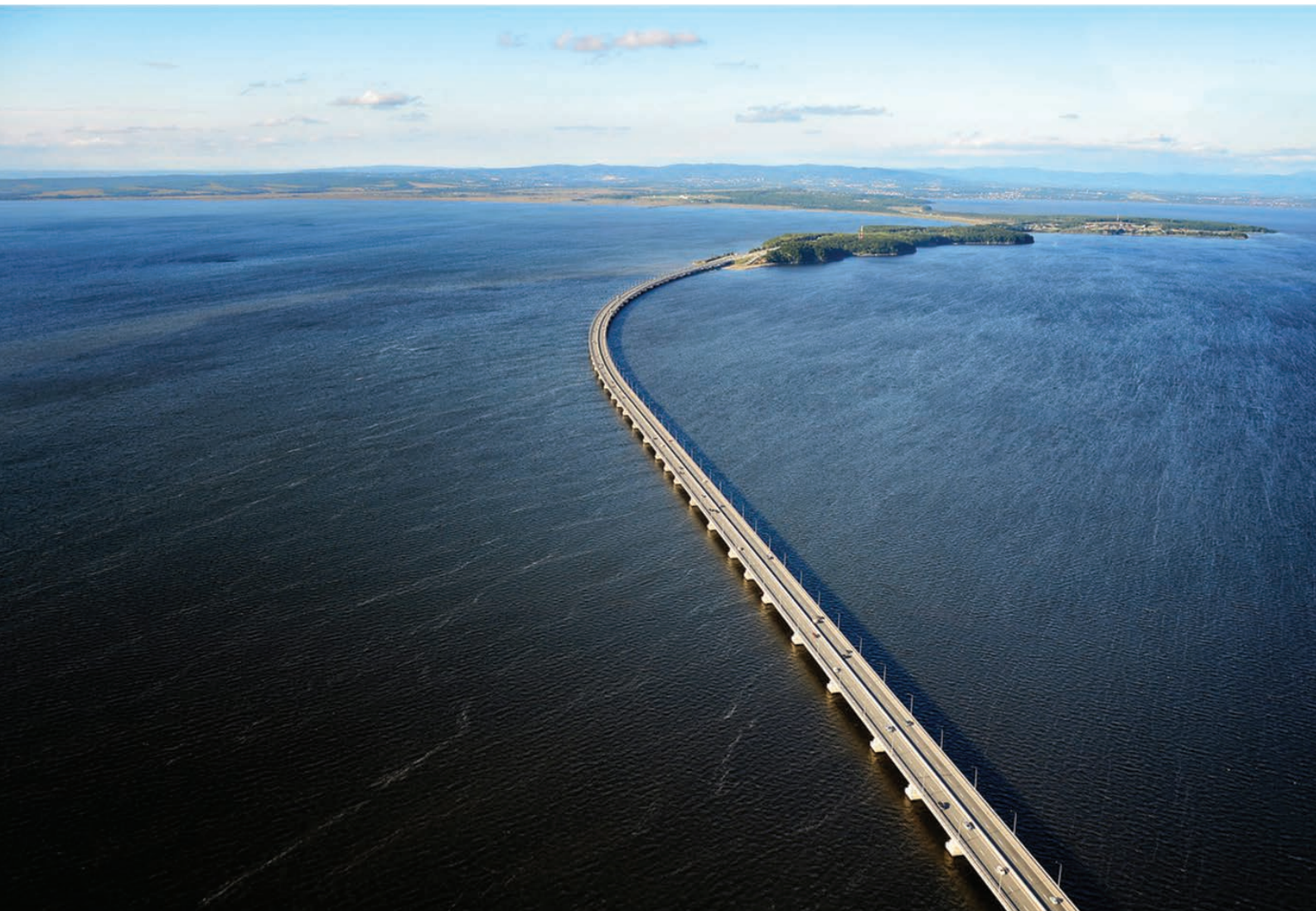
DESIGN STAGE:

2010 – 2011

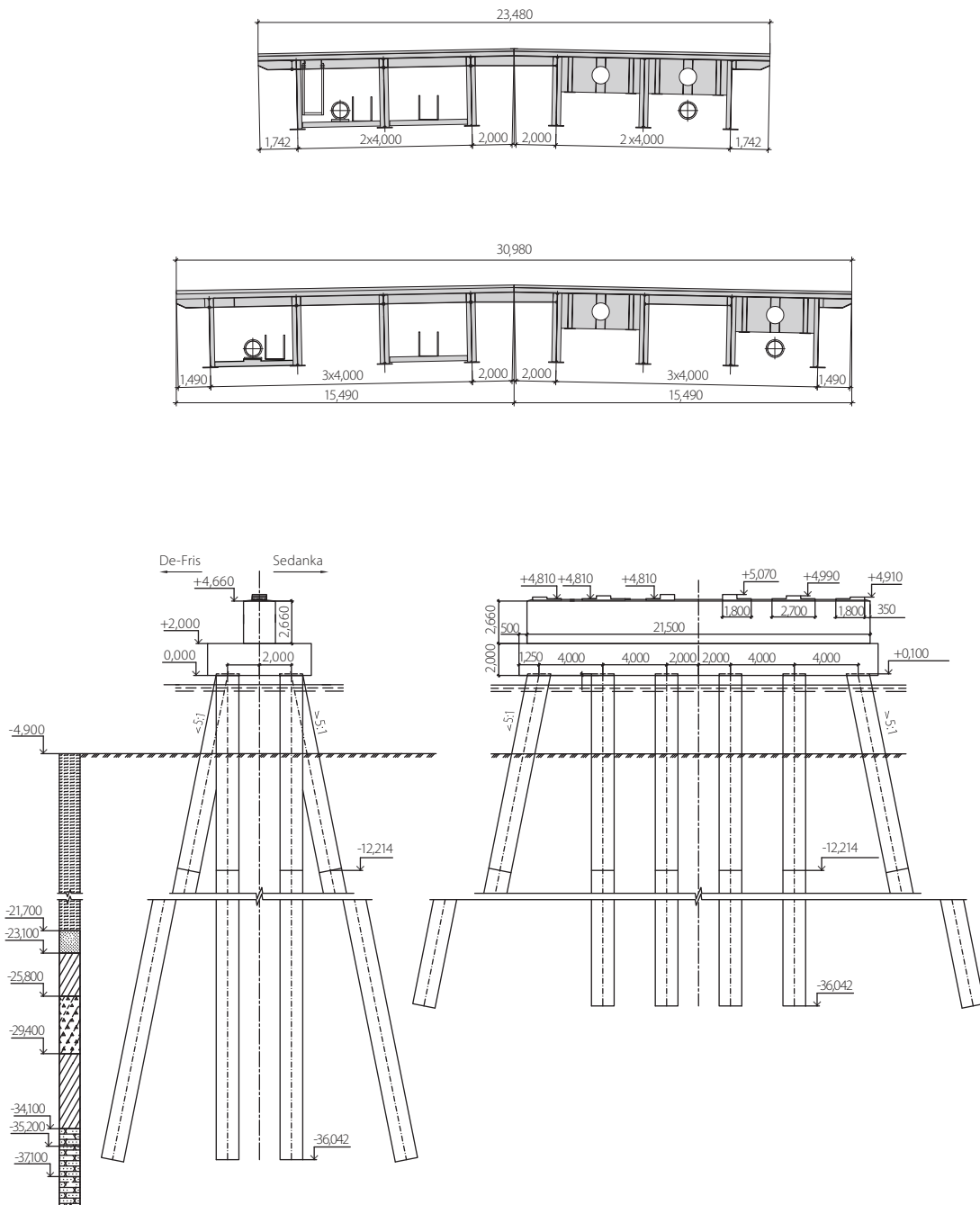
CONSTRUCTION STAGE:

2010 – 2012

DE-FRIZ



BRIDGE DIAGRAM



BRIDGE TO HELENA ISLAND

PROJECT PROPOSAL



Bridge crossing construction to Helena Island per relocation of cargo transit flow towards new direction Shkota Peninsula – Helena Island – Russky Island – Straight of Bosporus Vostochny to Highway Patrocl – Sedanka as city detour function.

New four lanes bridge of 2000 meters long with transportation capacity of 40 thousands vehicles a day being comfortable for navigation per vessels of 60 meters high.

The aforementioned structure should be fulfilled in accordance with up-to-date 'cutting edge' technologies and standards of bridge construction, plus to be our next city architect dominant as well as fascinating landmark of Vladivostok.



OUR EXPERTISE

■ design

- highway bridges
- railway bridges
- combined bridges
- highways
- streets and road interchanges
- viaducts & flyovers
- transport tunnels
- underground structures
- embankments and mooring berths
- retaining walls
- reinforced mounds
- buildings and structures of different heights
- sophisticated floors of buildings and structures
- foundations in complex environment

■ general design

- development of construction technology of bridge and transport structures
- development of projects for special auxiliary construction and devices (SAC&D)
- development of method statements (MS)
- development of construction method statements (CMS)
- development of projects for renovation and repair of bridge and transport structures
- design of monitoring systems for complex engineering structures
- sophisticated engineering analysis
- aerodynamic analysis
- development of technical and economic feasibility study
- financial estimates
- preparation of tender documentation
- engineering supervision
- protection of intellectual property articles
- design of technological solutions for objects of nuclear power engineering industry and complexes
- development of justification of radiation and nuclear protection



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