

Project identification

The Daugava Tunnel Project

Type of project

Immersed tunnel and ca. 10 km approach roads, bridges and viaducts



Client
Riga City Council, Financial Department

In co-operation with
Tebodin Latvia SIA and Juras Projects

Project assignment
Design Engineer and Employer's representative for the preparation of the Tender Documents for a Design, Build, Finance, Operate and Maintenance contract. The preparation of the Employer's Requirements, a basis of design, the total cost estimate, Bill of Quantities, Operation and maintenance cost estimate, preparation of a virtual model (movie) and a artificial (maquette).

Country
Latvia

Location
Riga

Project duration
2001 - 2002

Project phase
Feasibility phase and tender design phase

Construction cost
Appr. € 211.000.000,=
(excl. VAT. price level 2002)

Consultancy fee
€ 400.000,=
(excl. VAT)

Project description

The river Daugava divides the city of Riga into two parts, the west bank and the east bank. The city is a major seaport and a cultural and industrial centre with more than one million inhabitants. Due to economic growth the amount of traffic increases fast and the capacity of the existing river crossings is too low. To meet the expected traffic growth, a new Northern extension of the ring road was planned including a new river crossing with 2 x 3 lanes.

The Daugava Tunnel project is an 8 km highway link, starting at the east bank with an approach road of 2250 m with several junctions and connections to the existing road network, an immersed tunnel part with a length of approximately of 1300 m and an approach road on the west bank of the river of 4500 m, also with several connections and crossings with the existing road network. Both a concrete immersed tunnel as a steel shell tunnel was designed.

Office

Laan 1914 no 35
3818 EX Amersfoort
P.O.Box 28013
3828 ZG Amersfoort
The Netherlands

Telephone

+31 (0)88 348 2540

E-mail

info@TEC-tunnel.com

URL

www.TEC-tunnel.com

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Scope of work

Design Engineer and Employer's representative for all the aspects of the project during the feasibility phase and the tender preparation phase, including:

- Quick scan of a high cable stayed bridge, bored tunnel and an immersed tunnel.
- Preliminary design.
- Basis of design.
- Employer's requirements for the Approach roads.
- Employer's requirements for the Tunnel Civil Structures.
- Employer's requirements for the Tunnel Electrical and Mechanical Installations.
- Employer's requirements Definition Drawings.
- Employer's requirements, Quality System.

The design works included the following:

- Concrete immersed tunnel and approach roads.
- Steel shell tunnel as an option.
- Casting basin.
- Building aspects, construction stages.
- Cross overs.
- Dredging works.
- Reclamation works.
- Environmental aspects.
- Contaminated soils.
- Approach roads.
- Viaducts and bridges.
- Alignments of all the roads.
- Port and quay wall crossings.
- Rail way crossings.
- Electrical and mechanical installations.
- Cables and pipelines.
- Operation and maintenance.
- Land requirements and compensation costs.