

Yavuz Sultan Selim Bridge

Third Bosphorus bridge (BB3)

Suspended bridge with a main span length of 1 408 m and a total length of 2 408 m located at the north of Istanbul near the Black Sea.

As the Brooklyn bridge, the main span is partially suspended at the pylons by stiffening cables and at the main cables with vertical hangers. The top of the pylons is located at 320 m, they are composed of 2 concrete shafts (77 000 tons). The deck is 5,50 m high and 58 m wide with 4 road lanes in each direction, 2 railways tracks and 2 sidewalks.

In the central span, the deck is in steel with an orthotropic plate (total steel weight : 45 000 tons). In the side spans, the deck is in concrete.

The preliminary design is the result of a competition won by Michel Virlogeux (France) and Jean-François Klein (Switzerland). The final design is made by T-Ingénierie (Switzerland) and Greisch (Belgium) on behalf of the joint venture Içtas and Astaldi S.P.a.

The construction has to be completed by the end of 2016.

Situation: to the north of Istanbul across the Bosphorus near the Black Sea (TR).

Owner: KGM - Turkish ministry of transport - Highways department.

Conception: M. Virlogeux - JF. Klein.

Execution of the works: 2013 - 2016.

Total cost of the works: 700 000 000 euro excl.vat.

Mission:

- the global calculations of the structure during its service life;
- proposals for construction methods;
- the design of the steel deck in the main span;
- the dynamic studies necessary to verify the behaviour of the global structure:
 - under the wind (during the service life and the construction stages - verifications made with numerical simulations and by tests in wind tunnel laboratory),
 - under the earthquake and/or the passages of trains.

