

Yavuz Sultan Selim Bridge Third Bosphorus Bridge (BB3)

North of Istanbul across the Bosphorus near the Black Sea (TR)

General calculations of the steel structure, construction methods studies, dynamic studies (wind, earthquake, trains)

Owner
KGM - Turkish ministry of transport - Highways department

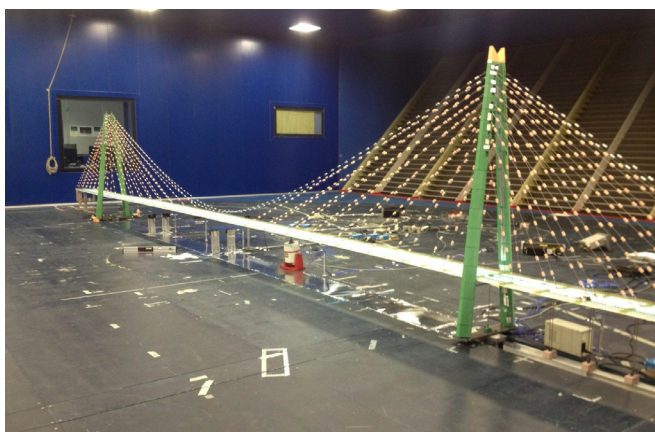
Designers
Michel Virlogeux and Jean-François Klein

Cost of the works
€ 700 M excl. vat.

Studies
2012 - 2016

Execution
2013 - 2016

OA



Suspended bridge with a main span length of 1 408 m and a total length of 2 240 m located at the north of Istanbul near the Black Sea.

Like 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.

Mission :

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