



Istanbul Strait Road Crossing Project Republic of Turkey Ministry of Transportation

Location: Kazlıcesme to Goztepe, Istanbul Turkey

Date: 2012 – 2015

Structure: Approach Roads from the European and Asian sides; Two-Deck Road Tunnel

Length: European Side Approach Road: 5.4 kilometers (3.4 miles); Istanbul Strait Crossing: 5.4 kilometers (3.4 miles); Asian Side Approach Road: 3.8 kilometers (2.4 miles)

Cross-Section: TBM Tunnel: 147 square meters (1,582 square feet)

Geology: Quartz, quartz arenite, arkose, conglomerate, sandstone, dolomite, limestones, shale and mudstone; most of the rock tunneling will be through the Trakya Formation

Cost: Approximately US \$ 1.3 Billion

Client: HNTB Corporation

Owner: Republic of Turkey Ministry of Transportation

Gall Zeidler Consultants (GZ) worked as a sub consultant for HNTB Corporation, the Independent Design Verifying Engineer (IDV), and provided independent design review services for the Istanbul Strait Road Crossing Project. The tunnel was built under extreme water pressure and through a highly active seismic zone using a slurry mixshield TBM. The services included a detailed evaluation of the ground support for Conventional Tunneling, cross passages and approaches, as well as general geotechnical aspects.



Figure 1. Conceptual rendering of the Istanbul Strait Road Crossing Project (Courtesy of Avrasya Tüneli).

Design Services for Conventional Tunneling Structures:

The Istanbul Strait Road Crossing Project, also called the Eurasia Tunnel Project, alleviates the traffic congestion in and around the city of Istanbul. With the total length of 14.6 kilometers (9.1 miles), the project connects the cities of Kazlıcesme and Goztepe on the European and Asian sides of Turkey, respectively. Construction included Conventional Tunneling approach tunnels and cross passages, ventilation shafts, cut-and-cover structures, and a 5.4 kilometer (3.4 mile) TBM tunnel beneath the Bosphorus Strait. The TBM tunnel consists of a double-deck road tunnel with two lanes on each deck. Avrasya Tüneli İşletme İnşaat ve Yatırım A.Ş. (ATAŞ) was founded in 2010 by the joint venture of Yapı Merkezi A.S. from Turkey and SK E&C from Korea to fund, design and build the Eurasia Tunnel Project. Additional team members from Korea included the Kukdong Engineering & Construction Co. Ltd., Hanshin Engineering & Construction Co. Ltd., and Samwhan Corporation.