TERZO VALICO DEI GIOVI SITE TRIP

Genova, November 30th

ITA & SIG 50th ANNIVERSARY CELEBRATION

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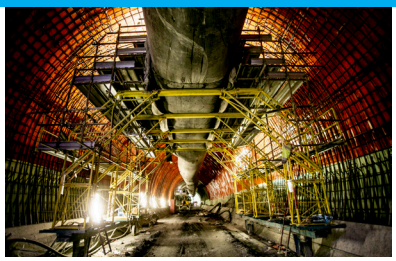
Terzo Valico AV/AC

Società Italiana Gallerie

Italian Tunnelling Society

Saturday 30th November



SITE TRIP PROGRAM

08:30 am	**Departure of buses from Genoa Porto Antico in front of Aquarium and Genoa Brignole station**
09:00 am	**Arrival at the base camp**
09:00 am	**Project presentation**
10:30 am	**Site trip to Castagnola lateral adit** (semi-automatic steel ribs system assembly)
1:30 pm	**Light lunch**
2:30 pm	**Site trip to Valico tunnel south adit** (ventilation tunnels)
4:15 pm	**Departure**
5:00 pm	**Arrival of buses at Genoa Porto Antico in front of Aquarium and Genoa Brignole station**

Detailed program available at
www.societaitalianagallerie.it

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PROJECT DESCRIPTION

The **railway Milan – Genoa**, part of the High Speed/High-Capacity Italian system, is one of the 30 European priority projects of the TEN-T transport network approved by the European Union on April 29th, 2014 (Priority project No. 24 "Railway axis between Lyon/ Genoa – Basel – Duisburg – Rotterdam/Antwerp).

The **corridor Genoa – Rotterdam**, also called **"Bridge between two Seas"**, connects up with the major ports in Northern Europe - Rotterdam and Antwerp/Zeebrugge – as well as the port of Genoa, one of the most important ports North of the Mediterranean. The corridor is an economic backbone because traverses a series of major industrial hubs, all strategically important to the European economic area, which defines this part of Western Europe as the "Blue Banana".

The line features two twin single-track tunnels, within which it will be possible to reach a speed of 250 km/h. The new lines will subsequently be connected to the existing ones, through four junctions, located at Voltri, Genova Parco Campasso, Novi Ligure and Tortona.

The new high-capacity **Milan-Genoa line is largely an underground route**. Starting from Genoa, the first section, the so-called Valico Tunnel, stretches for 27 kilometres length in underground, representing the Italy's longest underground railway route.

The project is one of the biggest tunnelling projects in Italy, involving different of tunnelling challenges, as the presence of natural gas and asbestos, squeezing ground conditions, presence of faults and high tectonic stress. Due to its great length and depth, both conventional and mechanized tunnelling methods were adopted. Overall, **the project includes 90 kilometres of tunnels**. 32km were excavated with TBMs, The remaining 58 using traditional methods.

During the excavation phases, the complexity of ground condition has required the **development of innovative excavation solutions**. One of them is the use of semiautomatic steel ribs, which have allowed to obtain a proper preliminary support even in presence of high overburden and presence of tectonic stresses.

This system allows the installation of the whole steel rib, including the steel invert, without presence of workmanship close to excavation face. It was possible, in this way, to guarantee safety conditions, and, at the same time, to achieve an optimal control of cavity displacements and an increase in production rate.

The site trip will provide an opportunity to understand the semi-automatic steel ribs system. In addition, the visit will include the Voltri shaft jobsite, where a complex system of galleries is being constructed to serve a shaft designed to evacuate smoke from the tunnel in the event of a fire.