

### Institutional Actions for Promoting Underground Works in Brazil

CBT has been heavily involved in promoting sustainable solutions of underground works when other types of disadvantageous solutions have been proposed. In some other situations, where underground solutions have already been selected, CBT has acted by suggesting improvements to the contracting process. A step backwards about this matter seems to have been taken in the country as new contracting parties (both public agencies and private entrepreneurs), with little or no previous knowledge about underground construction, have tended to decrease the demand for engineering design and to transfer all the budget risk and responsibility to the contractor or prospective concessionaire. In some cases, actions taken by CBT have reached the media including the most important newspapers in the country.

**Brazilian High Speed Rail:** The bid for the construction and concession of a 520-km long high speed rail line between Sao Paulo and Rio de Janeiro is scheduled for September 2012. The length of underground section is about 110 km. CBT has been suggesting improvements for the bidding process. CBT discussed the role of Brazilian companies on the High Speed Rail Project on a debate held in Sao Paulo on September 9, 2010, at the Sao Paulo State Engineers Union (SEESP).

**Santos-Guaruja Immersed Tunnel:** Santos and Guaruja are two major cities on the State of Sao Paulo coast, separated by the 500-m wide entrance to the busiest port in the country and Latin America. The connection between the cities is currently operated by a ferry boat service used by more than 7 million vehicles per year in each direction. During the last four years, many events and public hearings gathering engineers, politicians and other decision makers have taken place in both cities about the construction of a tunnel or a bridge. CBT President Hugo Cássio Rocha and CBT Past President Tarcisio Celestino have been invited to participate in all of them, where they have defended the alternative of an immersed tunnel. The State Government has decided to construct a 90-m high bridge with 2-km long approaches, but reactions have been strong and discussions are still going on. Media coverage about CBT actions has also been intense. Then, on August 2011, the State Government decided to change the solution and construct an immersed tunnel.

Concepts of Why Go Underground have been extensively used.

**Sao Paulo Ring Road Northern Link:** The Sao Paulo Ring Road Northern Link (the last one to be constructed) will run along the Cantareira mountain range. One of the last natural forest areas in the outskirts of Sao Paulo is on the Cantareira scarps. The underground solution (two 8-km long, 4-lane tunnels) seems to be the most appropriate solution from the environmental standpoint, but the Highway Department favors a surface solution because of construction costs. CBT has prepared a document and images of a digital virtual flight above the alignment to be taken to the Highway Department officials showing other costs in addition to construction in disadvantage of the surface solution.

Activities of the Working Group Mirror Groups continued in 2011. There are seven

active mirror groups at CBT: WG-03, WG-05, WG-06, WG-12, WG-15, WG-18 and WG-19. Other mirror groups have held meetings along the year. Full support was given to Tarcisio B. Celestino, CBT past president, and to Andre Assis, chairman of the ITA Committee on Education and Training (ITA-CET). It is also worth mentioning that CBT was one of the fund donators for the foundation of ITA-CET.