

Gotthard Base tunnel (GBT) – Electric power supply 50 Hz

Client

AlpTransit Gotthard AG (ATG)

Engineering

IUB as 50% partner of an engineering consortium

Construction period

2003 – 2016

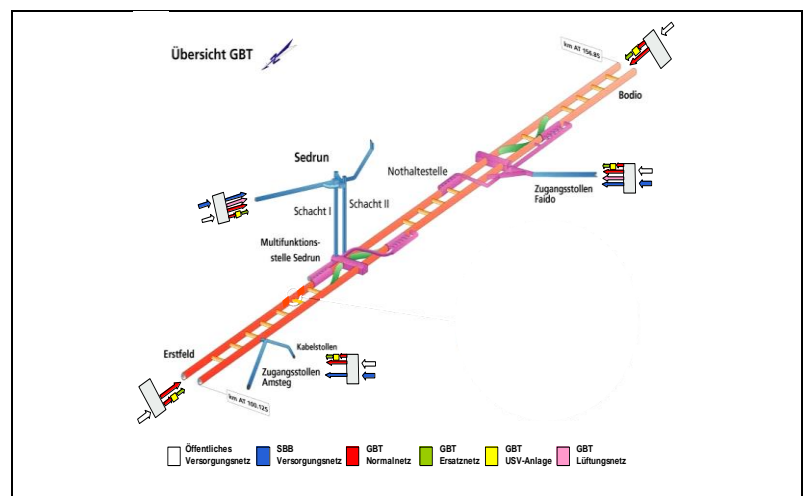
Construction costs

CHF 350 million

Scope of services

- Detail project incl. cost estimate
- Coordination with civil works
- Calls for tender (design & build)
- Review of the working design
- Supervision of implementation (shop inspections, prototype release, spot checks)
- Preparation & monitoring of commissioning

- 3,200 km power cables (of which approx. 360 km medium-voltage cables)
- approx. 2,600 km fibre-optic cables
- system protection technology
- control technology for power supply



Description

Design of the 50 Hz medium- and low-voltage power supply with protection and control technology for the 57 km long twin-tube railway tunnel, comprising five feeding points for three electricity companies between Erstfeld and Bodio; Power grid analysis guaranteeing high safety, availability and redundancy requirements (RAMS) ; Review and ascertainment of aptitude of all installations under the severe ambient conditions (temperature and pressure); Co-ordination between energy consumers and suppliers as to service level, and with the civil works in terms of space needed for switching equipment, cable conduits and heat dissipation.



Principal Data

- 5 redundantly constructed grid coupling stations (6 and 10 MVA)
- approx. 200 transformer stations (normal and auxiliary net)
- 10 no-break diesel generators (1000 - 1750 kVA)
- approx. 200 low-voltage main distributors incl. rapid switching modules
- approx. 750 low-voltage sub-distributors