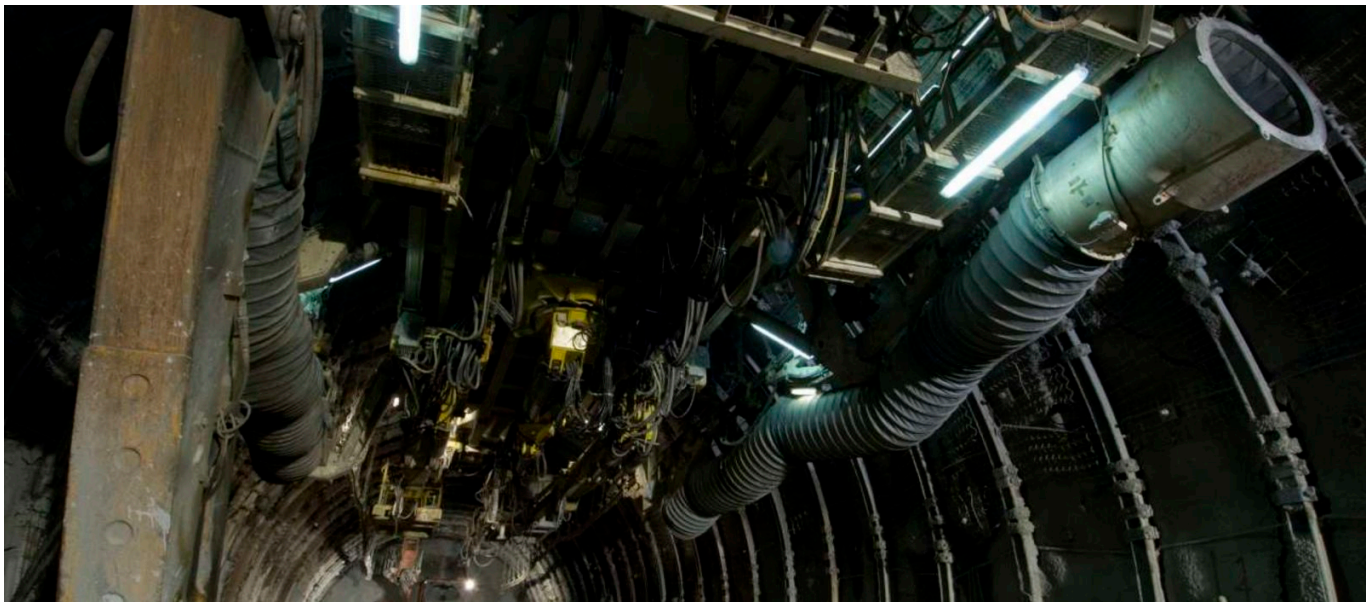
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Reference

Sedrun tunnel, lot 360, AlpTransit, Gotthard Base Tunnel









SHORT DESCRIPTION

Construction of two parallel single-track railway tunnels using blasting, and construction of a multi-function station.

THE PROJECT

- Context: The Gotthard Base Tunnel (GBT; German: Gotthard-Basistunnel, Italian: Galleria di base del San Gottardo, Romansh: Tunnel da basa dal Son Gottard) is a railway tunnel through the Alps in Switzerland. It opened on 1 June 2016, and full service began on 11 December 2016. With a route length of 57.09 km (35.5 mi), it is the world's longest railway and deepest traffic tunnel and the first flat, low-level route through the Alps.
- Railway tunnel with two single-track tunnel tubes, each approx. 9.0 km long, excavation cross-sections 60–134 m^2 (full excavation), cross-passages every 312 m.
- Multi-function station (MFS) with longitudinal and transverse caverns, four tunnel changeover expansions (excavation cross-section up to 230 m^2), tunnel changeover connections, side tunnels, ventilation tunnels and 14 ventilation shafts, 4 maintenance halls.
- Access via tunnel, length approx. 1 km, and two shafts with a depth of approx. 800 m. Challenge: highly complex

installations.

SERVICES IN DETAIL

- Blasting, securing with shotcrete, anchors, netting.
- Special heading in squeezing rock zones (northern part of the Tavetsch intermediate massif), securing with deformable steel structures, anchors, shotcrete, solid stabilisation of the working face.
- In-situ concrete tunnel lining.
- Shaft II: raise drill with subsequent expansion using shaft boring machine (diameter 7 m).

CHALLENGES

- Clavaniev zone (CZ), Tavetsch intermediate massif (TZM)
- Urseren Garvera zone (UGZ), Gotthard massif

FURTHER INFORMATION

- Special heading under tough geological conditions (squeezing rock, radial convergences of up to 70 cm).
- Challenging logistics: Supplying the construction site via an approx. 1000-metre-long access tunnel and two approx. 800-metre-deep blind shafts.
- Reusing and processing the excavated material for producing the concrete (in-situ concrete approx. 328,500 m^3 and shotcrete approx. 222,500 m^3).
- Total excavation volume 3,700,000 m^3, total weight of arch structures approx. 20,000 tonnes of steel.

FACTS

Location	Sedrun , Switzerland
Status	completed
Construction volume (value of our services)	1.51 B CHF
Start of construction	December 2001
Completion	January 2014
Building owner	AlpTransit Gotthard AG, Luzern
Contracting entity	Analog Bauherr
Project designer	Ingenieurgemeinschaft Gotthard Basistunnel Süd, c/o Lombardi AG, Minusio
Construction management	Analog Projektverfasser
Construction management	Analog Projektverfasser
TBM Tunnelling	✓

SERVICES

- Tunnelling
- Transport tunnels
- Service tunnels
- Caverns, shafts

https://implenia.com/en/references/detail/ref/sedrun-tunnel-lot-360-alptransit-gotthard-base-tunnel/

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