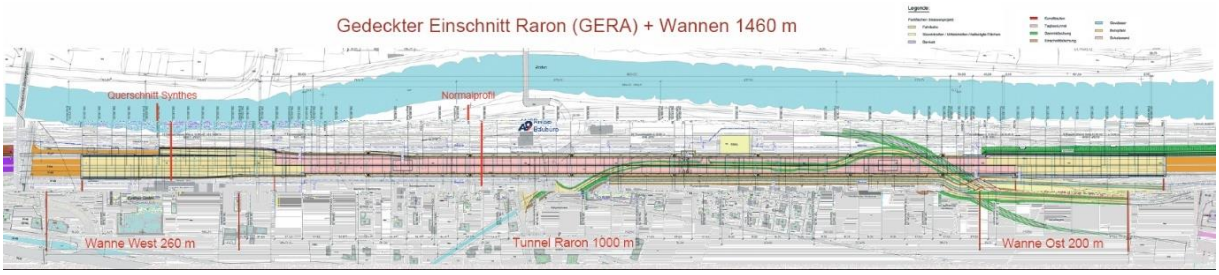
Interview

Highway A9

"Gedeckter Einschnitt Raron" (cut-and-cover tunnel) A project of the century in the south west of Switzerland (VS)

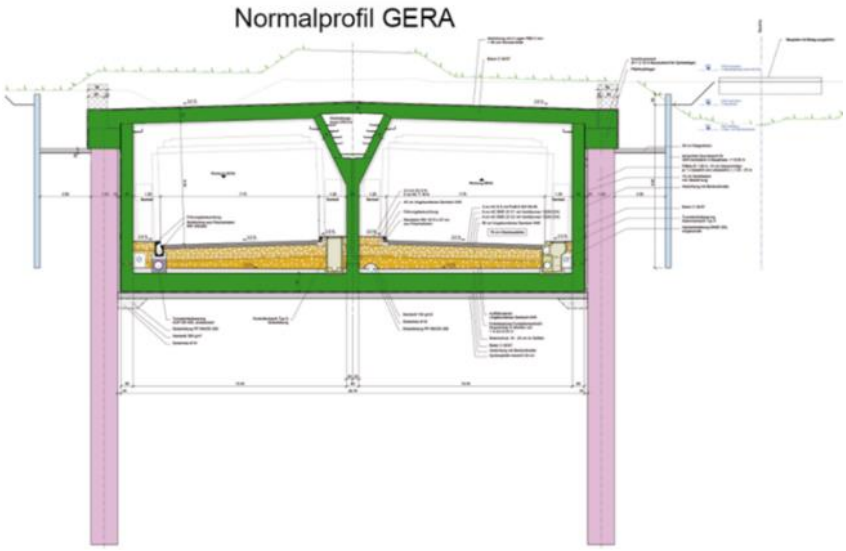


Facts
Construction time: 74 months
Bored pile wall concrete: m^3 63'500
Excavation (fix, incl. bored piles): m^3 450'000
Reinforcement (incl. bored piles): to 20'000
Concrete (excl. bored piles): m^3 106'000
Formwork: m^2 107'000

Total 2'844 piles, of which 2'240 secant pile wall Ø 1300 mm.

A project that not only connects the entire Valais, but also brings added value to the people, business and tourism.

31.8 km of highway for the Oberwallis! As part of the completion of the Swiss national road network, the canton of Valais is building the missing section of the A9 highway in the Upper Valais between Sierre and Brig. Project management is the responsibility of the Department for national roads (Dienststelle für Nationalstrassenbau (DNSB)) based in Brig-Glis (Gamsen). The Federeal Roads Authority (Bundesamt für Strassen (ASTRA)) has overall supervision of the construction of the A9 motorway.
(Source: www.a9-vs.ch)



The project is explained in more detail here in an interview with Egon Studer, department of mobility, regional development and Environment (Departement für Mobilität, Raumentwicklung und Umwelt DRMU)), service for national roads construction (Dienststelle für Nationalstrassenbau DNSB)), who manages and directs the construction site in both structural and technical matters.

Mr Studer, what were the construction challenges in the project?

The Raron cut and cover tunnel (GERA) is located south of the Rhone River in the Turtig district of the village of Raron. Parallel to this, to the North of the project, at varying distances, runs the double-lane SBB railway line. The smallest distance between the centre line of the secant pile wall and the centre line of the southern track is about 4.30m. Furthermore, on the south side, the structure is close to the buildings of the internationally active company Jabil, whose production facilities react sensitively to vibrations. For this reason, all necessary construction work is directed towards minimising deformations and vibrations. The excavation pit closure is one of the decisive components with regard to the risk (defective areas in the bored pile wall). An essential part of the safety concept of the excavation pit is its comprehensive monitoring as well as the surrounding area. The purpose of monitoring is to detect dangers at an early stage on the one hand and to ensure that measures are taken to prevent damage on the other.

Brextor ensures quality management and continuous construction progress

Can you tell us how the use of Brextor has changed the planning?

Due to the efficient working methods and workflows through the use of Brextor, the follow-up work can be better planned. The work output per day is quickly determined. The follow-up work can therefore be planned quickly and precisely.

How would the project have gone without the use of Brextor?

As the owner, we are convinced that the planning for subsequent work and, above all, the quality of the pile head would not have been as optimal with a conventional pile head processing method.

As a builder's representative, where do you see the most added value of Brextor?

- Performance per day
- Precise
- Flexible
- High qualitiy (concrete pile head surface, no cracks, no damaged reinforcement, etc.)

Facts special civil engineering piles:
5‘900t iron; 76‘000 m³ concrete
2‘240 pcs. tangent pile wall Ø 1300mm
Total 2’844 piles:
2‘240 pcs. Ø 1300mm
294 pcs. Ø 1000mm
170 pcs. Ø 880mm
140 pcs. Ø 750mm
Total pile lengths 61km
Execution pile construction; Ghelma AG
Connecting reinforcement
26 pcs. à Ø 30mm x 1.5m
Pile head processing with Brextor; Theler AG
Excavator: Komatsu PC290

How do you rate the quality of Brextor compared to previous processing methods?

The rotating chisels always create a horizontal surface. No vertical forces act on the pile head.

In my opinion, there are advantages in the work process. On our construction site, two employees carry out this work. One is the operator in the excavator and the other is a construction worker. They have no physical or close contact during the work process.

"Uncontrolled chipping and cracking in the pile head area can be prevented with the system."

In addition, work can be carried out with centimetre precision. No further work steps are needed, except for cleaning.

How much time and how many resources can you save by using Brextor?

We can only judge how much time is saved compared to the preliminary tests. Here we can assume a saving of about 50-70 per cent.

In the current situation with COVID-19, do you also see advantages in working with Brextor?

In your opinion, what are the special features that make the Brextor different from traditional methods?

„In particular, the care and precision in the execution when milling the piles to the pile head height is a special feature of Brextor. In addition, the performance can be planned which is enormously important for follow-up work."

Made in Switzerland, how important is this label to you?

Switzerland is known for its high standards. The segment can be met with the product. In this way, we not only maintain quality, but also secure innovation and jobs.

How do you personally see the chances for Brextor's international success?

Personally, we see great potential for international success with Brextor.

„The Brextor's performance and quality sets it apart from conventional methods."

The demand for expected and maintained quality alone should speak for international success.

Will you rely on Brextor again for future projects?

Yes, we will make this reference to Brextor in the tender text.

Will you recommend Brextor?

Yes, definitely. Based on our experience, we can recommend the product at any time.

Thank you Mr Egon Studer for your openness and answering our questions.

For more information visit:
www.a9-vs.ch

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