

Extension of the Mont Terri Rock Laboratory

Since the rock laboratory was first put into operation, some 150 experiments have been initiated, all of which require a defined space within the laboratory (red areas in Fig. 1). Two-thirds of these experiments have already been completed, one-third of them are still actively continuing today. There is practically no room available for new experiments and many issues that require resolution to plan and build a repository for high-level waste targeted for 2060 are still unresolved. These issues focus mainly on the optimization of technical barriers (stability of steel containers and other materials, interaction of bentonite with Opalinus Clay) and the question of how to seal a deep repository. The operator, swisstopo, together with the 16 partners, therefore decided to expand the Mont Terri rock lab.

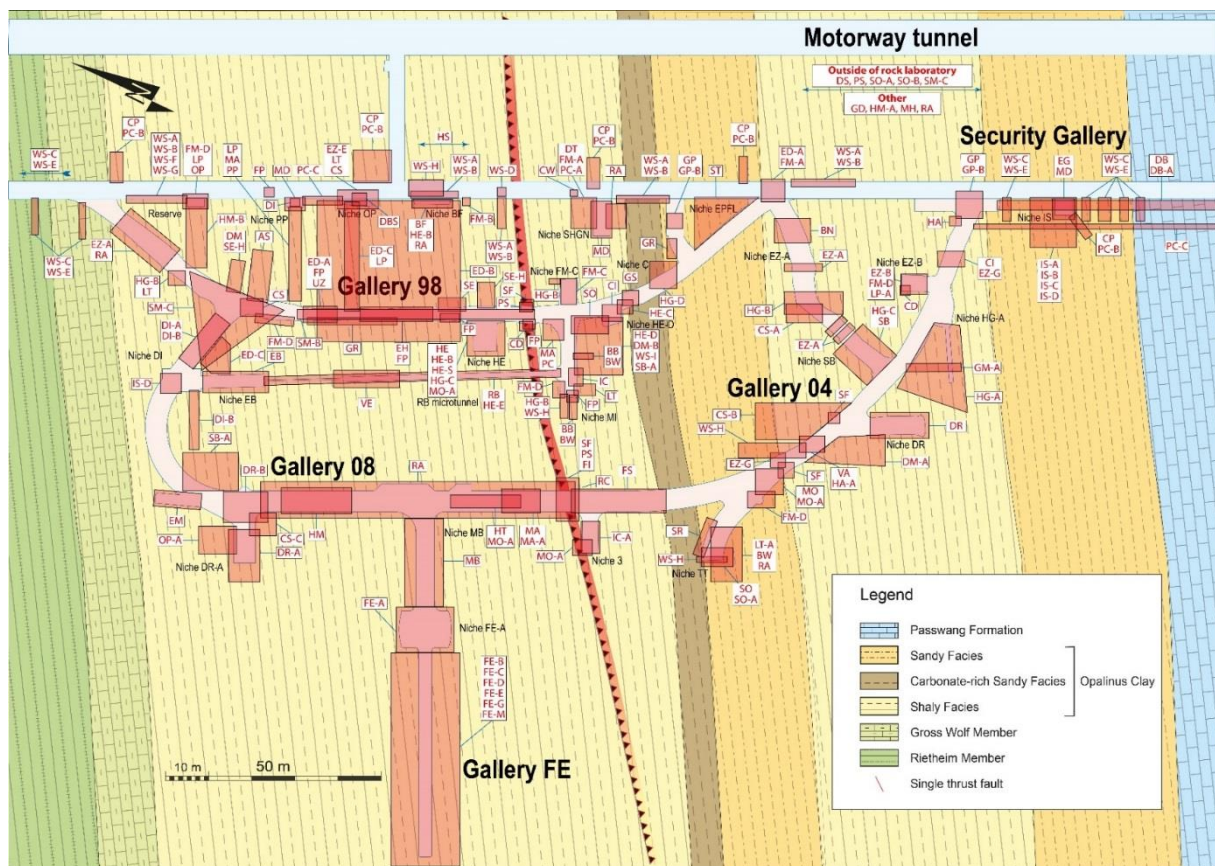


Fig. 1: Map of the Mont Terri rock laboratory with the experiments already installed. There is no space available for new experiments!

The 16 partners are now developing a new research program for the next 10 years comprising ca. 50 proposals. The main emphasis is on deep geological storage of radioactive waste and CO₂ sequestration. All these proposals depend on having more space in the rock laboratory to conduct the experiments. Realizing this need, in early 2016 we applied to the Canton of Jura for permission to extend the laboratory (green tunnels in Fig. 2). In December 2016, the Canton of Jura approved the application for extension of the rock laboratory. The costs for the expansion amount to ca. CHF 4 million and will be born by the 16 project partners.



Fig. 2: Map of the rock laboratory with the planned extension in green.

The planning of the extension took into account that, on the one hand we would like to carry out the new experiments in the sandy facies of the Opalinus Clay (found in the southern part) and, on the other hand, we would like to avoid disturbing the ongoing demonstration experiments in the northern part of the laboratory. Therefore we positioned the new experiments in ca. 600 m of new tunnels and niches in the southern part of the rock lab shown in Fig. 2. Since early 2017, swisstopo has worked with GGT (Groupe Grands Travaux), Canton of Jura, to prepare the tender documents for the construction of the new tunnels. This is an open procedure following the Swiss Federal Government's rules for public procurement. The schedule for the call for tenders, publication on www.simap.ch (Swiss electronic platform for public procurement purposes), and the award schedule are included in the table below.

What	Who	When
Elaboration of tenders	Planners, swisstopo	January-May 2017
Publication of the tenders on simap.ch	swisstopo	15. June 2017
Deadline for submitting offers	Contractors	24. August 2017
Decision on the awards	Mont Terri Consortium, swisstopo	12. October 2017
Publication of the awards on simap.ch	swisstopo	20. October 2017
Start of excavation	Contractors	Begin 2018
Completion of construction work	Contractors	End 2019

Start of excavation for the extension is scheduled for 2018. The first experiments will begin already during the expansion with a “mine-by” test to detect hydraulic and rock mechanical changes during construction. In 2019, the extended laboratory will be handed over to the research partners.

The visitor centre of the Mont Terri rock laboratory offers a two-hour guided tour for interested persons (groups of 10 or more). We welcome visitors during the extension work but for security reasons, please expect some hinderances and visit times limited by excavation schedules. You can already now register via www.mont-terri.ch!