Expansion Rail Station Berne RBS, Lot 1.3 (CH)
Sheet Waterproofing

Country	Switzerland
Type	Transit, Railway
Client	Regionalverkehr Bern-Solothurn (RBS)
Main Contractor	Marti Tunnel AG
Execution of the work	Renesco AG
Designer	RBSverbindet, Emsch & Berger, Basler & Hofmann, B+S, Theo Hotz Partner
Construction Period	2022–2024

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Project Description

The project "Expansion of Berne RBS Station" involves the construction of a new underground station as well as the railway line, various shafts, and galleries – all under full operation of the existing infrastructure including city traffic. The project consists of two 200m long, 26m wide and 17m high station caverns, which lie up to 7m underneath the existing railway tracks of Berne Central Station. The 1.5km access railway line has different cross sections and runs both underground and above ground (open cut). Challenging is also the waterproofing system, which is partly with vacuum (double-layer, active control, P&I).

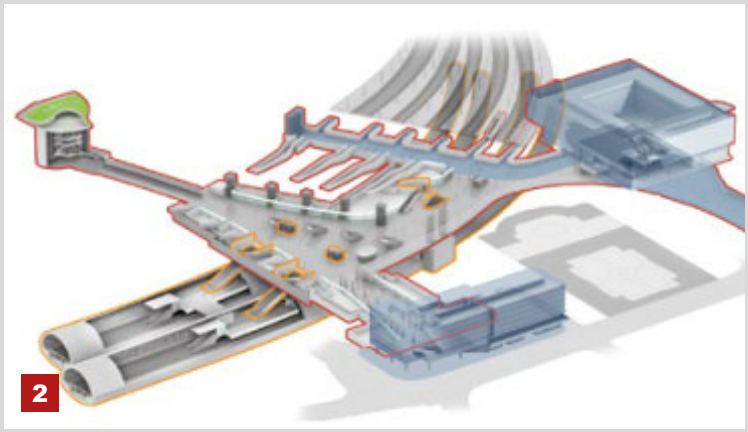
Geology

- Lower fresh water molasse (sandstone, fine sandstone, siltstone, marl)
- Moraine

Scope of Service

Supply & Install of a sheet waterproofing membrane system, 3mm PVC-P acc. to SIA272 (Swiss standard), full-round (360°) sealing. Partly - installation of an active control system (P+I) consisting of two layers of sheets, compartmented in section areas, and tested via vacuum.

- Protection geotextile, 500g/sqm, PP
- Waterproofing sheet membrane, PVC-P, 2 and 3mm
- Protection Sheet membranes, 2mm, PVC-P
- PVC-P water barriers, 400/6/30
- Drainage layer
- Termination via adhesive strips
- BA anchors
- Well pots (1'000mm, 508mm)
- Penetrations
- Supply + Apply of an injection system
- Ground improvement via cementitious injection including drilling operations.



1. Access tunnel
2. 3-D model/ overview/ visualisation
3. Station caverns – visualisation of the vault