Pump Storage Hydro Power Station (CH)
Shaft Waterproofing

Country	Switzerland
Type	Surge Chamber/ Shaft
Client	Kraftwerke Linth-Limmern AG c/o Axpo
Main Contractor	Joint Venture KWL/ Marti Tunnelbau AG
Execution of the work	Renesco AG
Construction Period	2010/2011

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Project Description

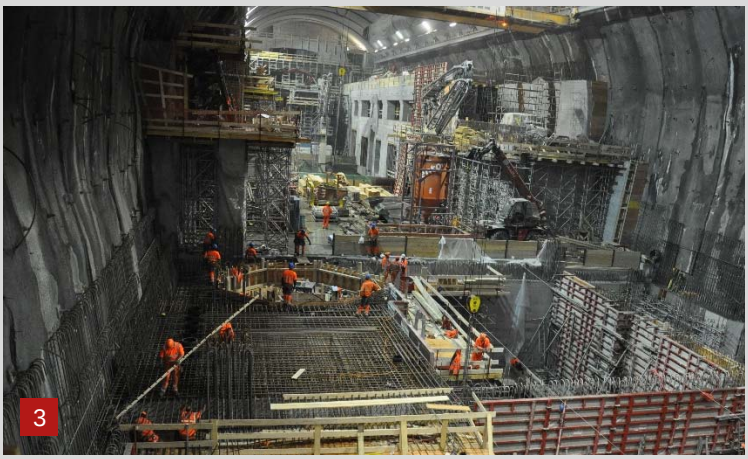
Extension of the existing power station with a pumped storage scheme. Increase of the total power production from 450 to 1’450 MW and water storage volume from 9 to 25 Mio. m³. The work will be executed at various sites under high alpine environment with big potential of natural hazards/ unstable weather conditions.

The work involves the following:

- Machine- and transformer caverns for 4 groups of 250 MW each
- Various connecting tunnels, cavern system OW / UW, Total approx. 1,200 m, A = 18 - 29 m²
- 2 inclined pressure shafts, drilled with tunnel boring machine, l = 2 x 1’120 m, Ø = 5.2 m, inclination = 45°
- Concrete dam Muttsee, l = 1’050 m, h =35 m
- Concrete work above ground for the power station intake and outlet structures at Limmernsee and at Muttsee
- Surge shaft h = 130 m, Ø = 11.7 m
- Access and service tunnels by drill and blast
- Inert substance landfill, Limmerntobel

Scope of Service

Sheet Waterproofing Application (Water Pressure up to 13bar), 2.5mm PVC-P according to SIA272 (Swiss standard), Protection Geotextile, Protection Sheet Membrane and Water Barriers.



1. Intake/Outlet Structure at Limmernsee
2. Pressure Shaft/ Tunnel
3. Cavern