

Energy From Caves

HOBAS® Pipes for Austria's first Mining Cave Power Station

Year of construction

2010-2011

Construction time

16 months

Total length of pipe

980 m

Pipe characteristics

DN 300, PN 16, SN 10000

Installation method

Open trench

Project operator & Designer

AAE-EntwicklungsGmbH

Christoph Aste

Advantages

Saving on fittings thanks

to the HOBAS Angular

Cut GRP Pipe System,

easy handling, long

service life, corrosion

resistance

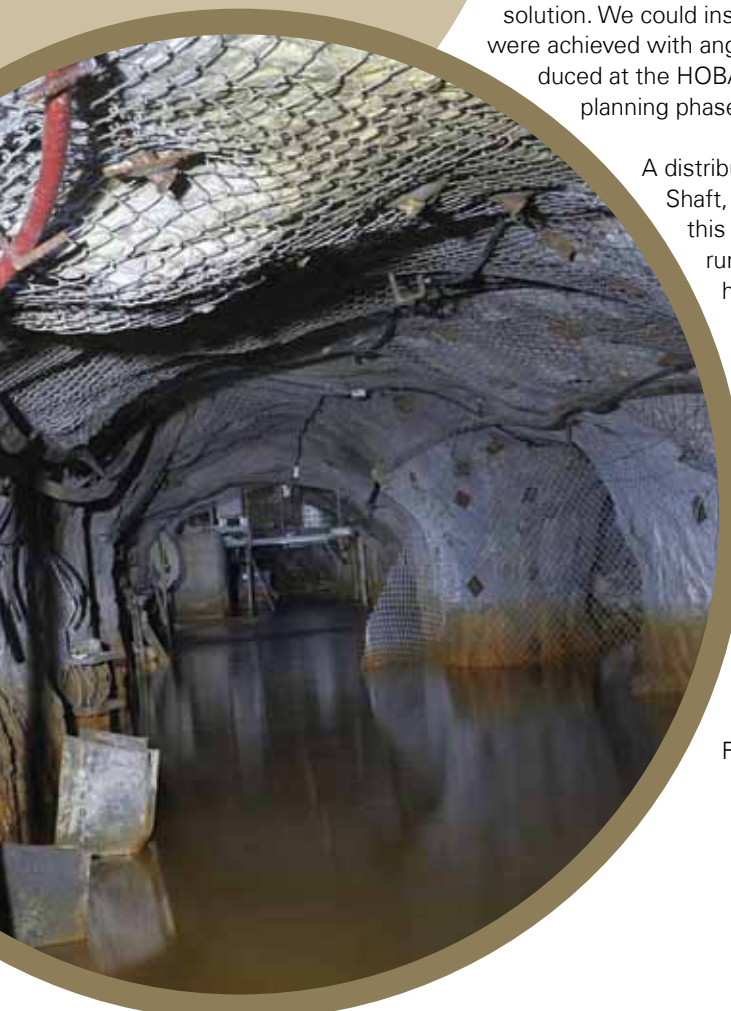
Water has always been of major significance to the traditional Austrian spa and mining village Bad Bleiberg. The nearby 2166-meter-high mountain Dobratsch has acted a big part in providing spring water for centuries. On the mountain's north side, 1015 meters above sea level, lays the Nötschbach Spring, which peaks at 500 liters per second. Amongst others, this spring was to be used for the erection of a new hydropower plant in the abandoned mining caves 260 meters below ground.

The idea to construct a new small hydropower station at this old mining site originates from Christoph Aste, an engineer who has been pursuing this project since 2004 with great endurance. 2009, he finally received the license to implement his plans. The Limited Liability Partnership AAE-Entwicklung who erected the station was founded together with AAE Energie in Kötschach-Mauthen.

One of the first jobs in the framework of the construction plans concerned the pressure pipe from the Nötschbach Spring, which had been erected for the mine in the 1890s. Since the old pressure pipes DN 360 made of English cast iron turned out to be tight, the first part of the old line was left as it is. Due to the mountainous area and since the pipe routing could not be altered the old line was continued with state of the art pipe technology: The old cast iron pipe was cut and continued with HOBAS GRP Pipes DN 300, SN 10000, PN 16. The new pressure line now runs for about 980 meters through the spa town to the mining shaft building at the Rudolf Shaft. "The GRP Pipe System from HOBAS presented a functional solution. We could install almost the complete line without fittings. The required radii were achieved with angular deflections in the joints and with angular cut pipe ends produced at the HOBAS Factory. HOBAS Experts supported us during the complete planning phase", states Aste.

A distribution system was installed at the entrance to the Rudolf Mining Shaft, where all water leads into a cast iron pressure pipes. In turn, this line leads into a pipe lined with cement mortar which vertically runs down along the wall of the Rudolf Shaft up to the old existing hydropower station. A high pressure hydroelectric generating set for efficient electricity production was installed at a depth of 260 meters.

This hydropower project has been successfully implemented between May 2010 and September 2011. Meanwhile, the facility has been in service for 1.5 years and is supplying the network of KELAG – one of Austria's leading energy providers – with about 1.5 million kWh per year. For additional electricity generation, a part of the naturally occurring thermal water is planned to be conveyed to the turbine. The rest of it will be warmed by a heat pump and fed into the local thermal baths.



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