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New Ossasco Hydropower Plant / Switzerland

Client
CEL Bedretto SA, Bedretto

Consultant
IM Maggia Engineering Ltd, Locarno

Construction period
2010–2012

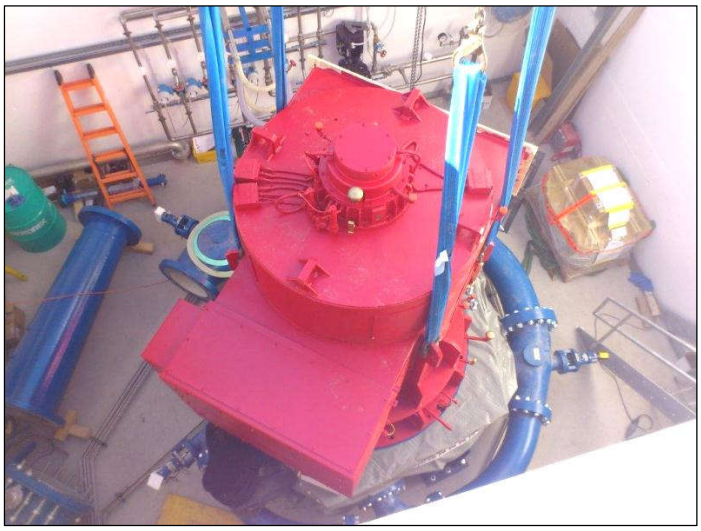
Construction costs
CHF 6.7 Mio.

Engineering services
Preliminary studies, preliminary design, final design, tendering, construction design, construction supervision.

Description
High head plant on the Ri di Cristallina stream with Tyrolean intake, sedimentation basin. Penstock and power house. At the altitude of 1'544.00 m a.s.l. it conveys the water from the stream to the underground sedimentation basin and then to the power house through a DN600 underground penstock.

Main technical data
Intake 1'544 m a.s.l.

Sedimentation basin	L =	17.46 m
	B =	2.5 m
Penstock in cast iron		
	Ø =	DN 600
	L_{Tot} =	1035 m
Power house 1'311.6 m a.s.l.		
Expansion of water volume	Q_A =	0.7 m³/s
Level	H_N =	220 m
Expansion capacity	P_A =	1.6 MW
Pelton turbine vertical, 4 nozzles		
	P_N=	1.36 MW
	Q_N =	0.7 m³/s
	n =	1000 U/min
Synchronous generator		
	S =	1.8 MVA
	n =	1000 U/min
Transformer	P_{TR} =	1.8 MVA


Installation of the generator through the floor opening


Installation of the cast iron penstock DN600 on the steep slope


Fixed barrier with the Tyrolean system