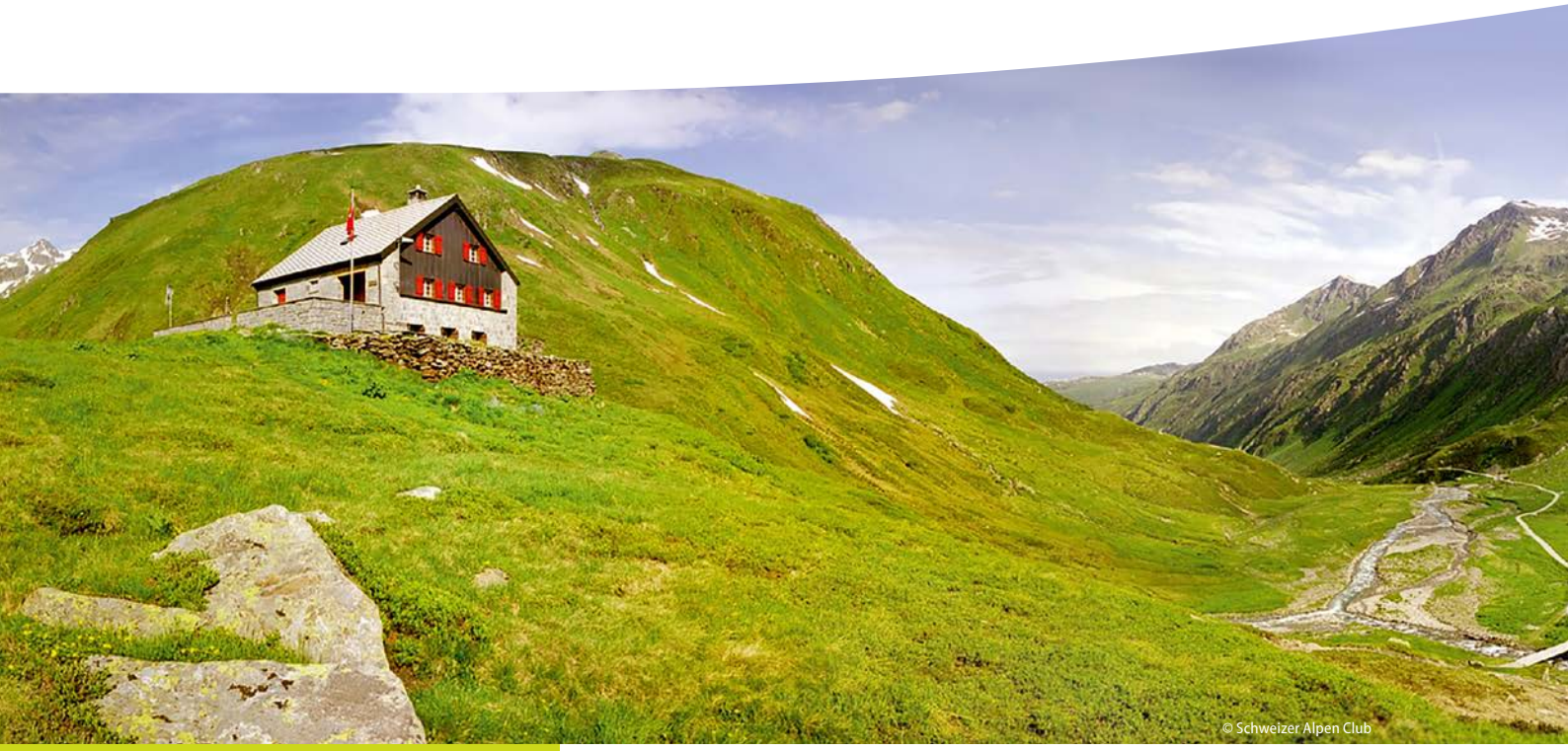
LEONI *projectreport*

All-in-one solutions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Vermigelhütte electrification project

Aiming high – customer-focused design and logistics

The electrification of a Swiss mountain cabin at an elevation of over 2000 m is a very special kind of challenge. LEONI accompanied and took responsibility for this challenging project as a general contractor until the plant handover.

Medium-voltage electrification at over 2000 m a.s.l.

The remote Vermigelhütte lies ten kilometres southeast of Andermatt. Operated by the section Zofingen of the Swiss Alpine Club (SAC), this mountain cabin in the Unteralptal offers its guests the chance to enjoy the stunning beauty of its surroundings all year round. With the expansion of the Four Headwaters Trail, however, visitor numbers have risen – as have their requirements. In responding to these changes, the SAC wanted to use the electrification of the Vermigelhütte to better accommodate the needs of its visitors and thus promote tourism in the region into the long term.

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After careful consideration of customer requirements and local conditions, LEONI drew up a number of solution approaches for providing the cabin with electrical power. The design of the supply line involved the creation of technical solutions for a number of voltage levels. Load flow calculations were then used to calculate and compare various low- and medium-voltage – 400 V and 16 kV – network variants.

LEONI was tasked with planning the eight kilometre medium-voltage (16 kV) line and the transformer station in the cabin itself. Project management work also involved coordinating permit application procedures, however: meetings with public agencies and officials and drafting a proposal for the Federal Inspectorate for Heavy Current Installations (ESTI) were all part of the process.

Conceptual design and logistics: every project is unique

The completion of cable routing work through a seven kilometre drainage tunnel through the Alpine main ridge required a carefully designed cable pull plan, for which a set of carefully coordinated pull and routing methods were developed. LEONI also coordinated deliveries and other logistics related to the medium-voltage cable. A detailed health and safety plan was also prepared to guarantee the safety of workers during cable pulling work in the drainage tunnel.

With its comprehensive portfolio of products and services plus customer-focused consulting, LEONI made a significant contribution to the success of the project.

Plant data

Start date	10 June 2015
Commissioning	Summer 2016
Transformer type	Dyn5, Giessharz
Transformer output	50 kVA
Transmission cable length	8 km
Cable type	XDALZ-Z 3x1x50 Al/27 Al

Products and services from LEONI Business Unit Building Technologies

- Consulting services to the owner
- Project design and planning
- Handling of ESTI proposals
- Implementation consulting
- Medium-voltage cables
- Transformers
- Medium-voltage equipment
- Project management

Customer benefits

- Cost savings due to capital investment- and loss-optimised solution
- Low line losses, thanks to an optimised transmission system
- Broad expertise in implementation
- Environmentally friendly implementation due to optimised cable routing

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