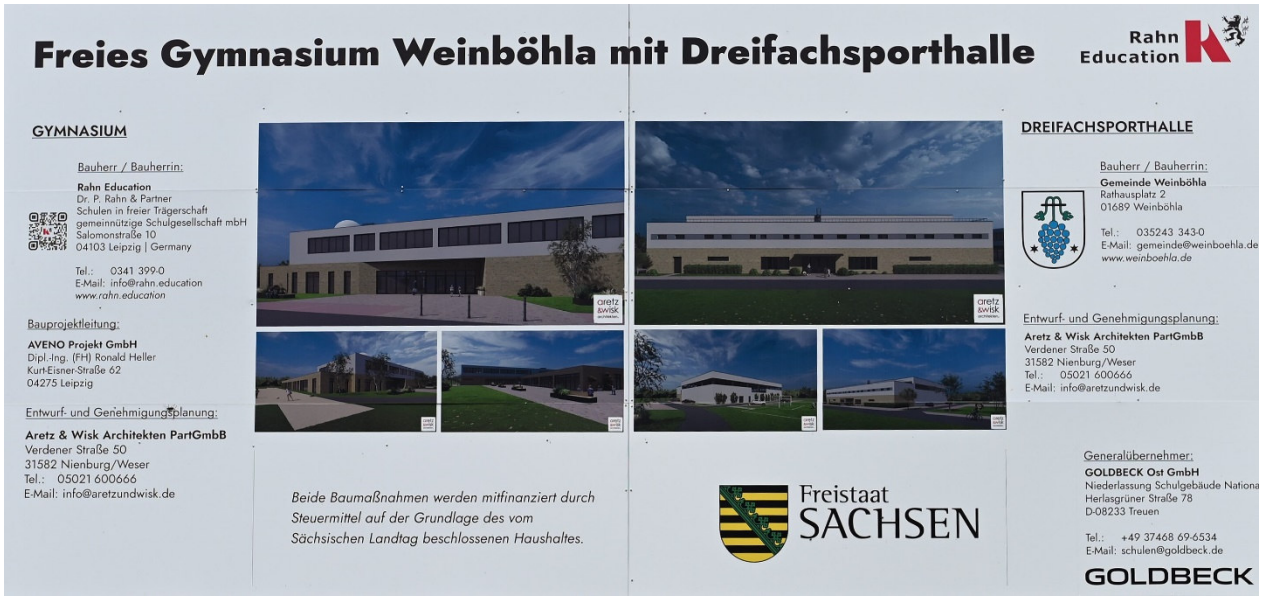
HakaGerodur

Image source: Rahn Education

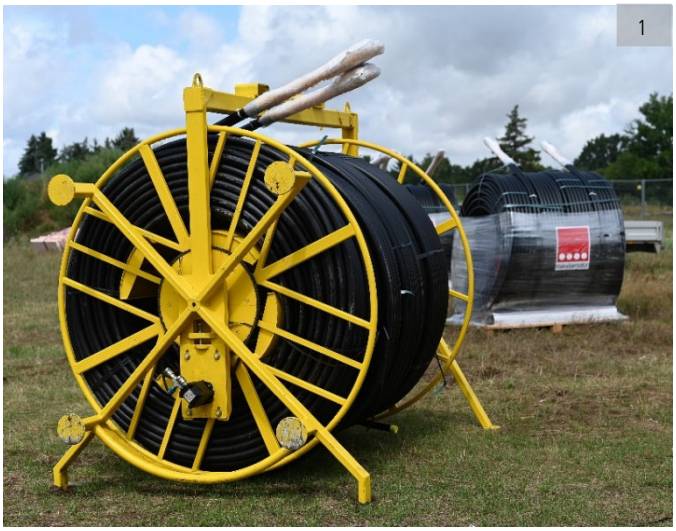
Project report

GEROtherm® FLUX geothermal probes

New building for Weinböhla grammar school



The new Rahn Education grammar school in Weinböhla, Saxony, has now been completed. Goldbeck, a construction and services company active throughout Europe, has completed the new school building, which was financed by the State of Saxony with funding of four million euros. Rahn Education, which operates a range of different schools at 40 locations, will implement a modern learning and teaching model at the Freies Gymnasium Weinböhla. The school's concept is based on openness, humanism, and digitally supported, tailored learning. The programme emphasises languages, physical education and STEM subjects, including mathematics, astronomy, artificial intelligence, computer science and physics. Particular highlights of the new school building are its on-site observatory with modern telescopes and Germany's first retractable trampoline, which will be installed in the sports hall built by the local authority.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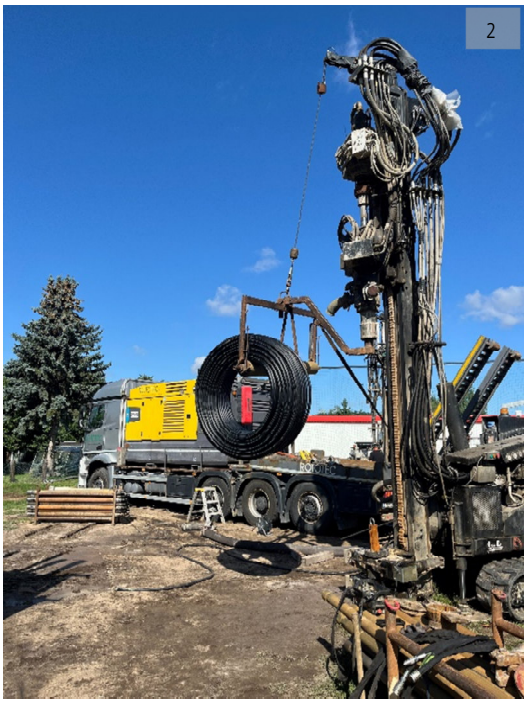
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To meet the heating and cooling requirements of the new school building and sports hall, a heat pump system was selected as the most efficient and environmentally friendly solution. The required TRT test borehole was drilled to a final depth of 350 metres, resulting in the deepest geothermal probe borehole in Saxony to date. To meet the required total heating demand of 483 MWh/a and cooling requirement of 35 MWh/a, 12 GEROtherm® FLUX 43 double-U-shaped geothermal probes, each 330 metres long, were drilled into the ground. The conical safety- and pressure-loss-optimised borehole heat exchanger, which is resistant to internal pressures of up to 32 bar and external pressures up to 22.6 bar, was specially developed for such applications and is therefore the ideal solution. Experience has shown that an excellent product is not enough on its own to make such a demanding project a reality. This requires a qualified, experienced and certified drilling company, such as Erdwärme und Bohrtechnik GmbH, based in Saxony.


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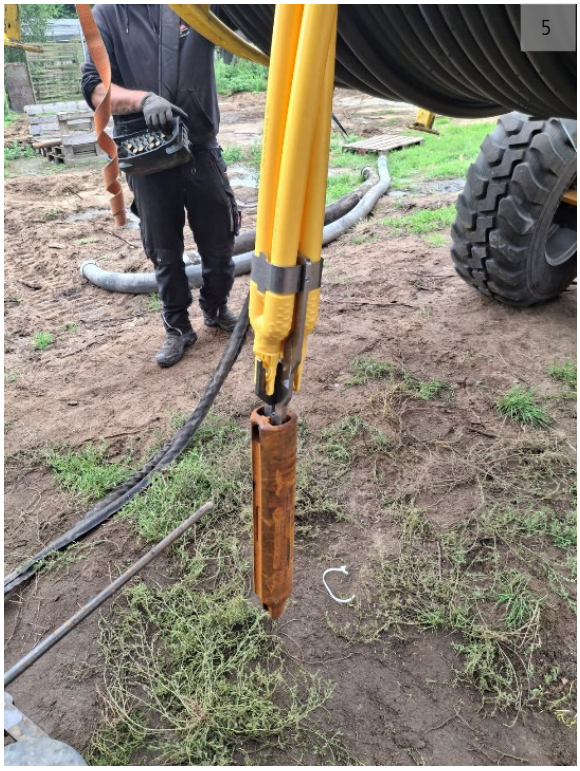
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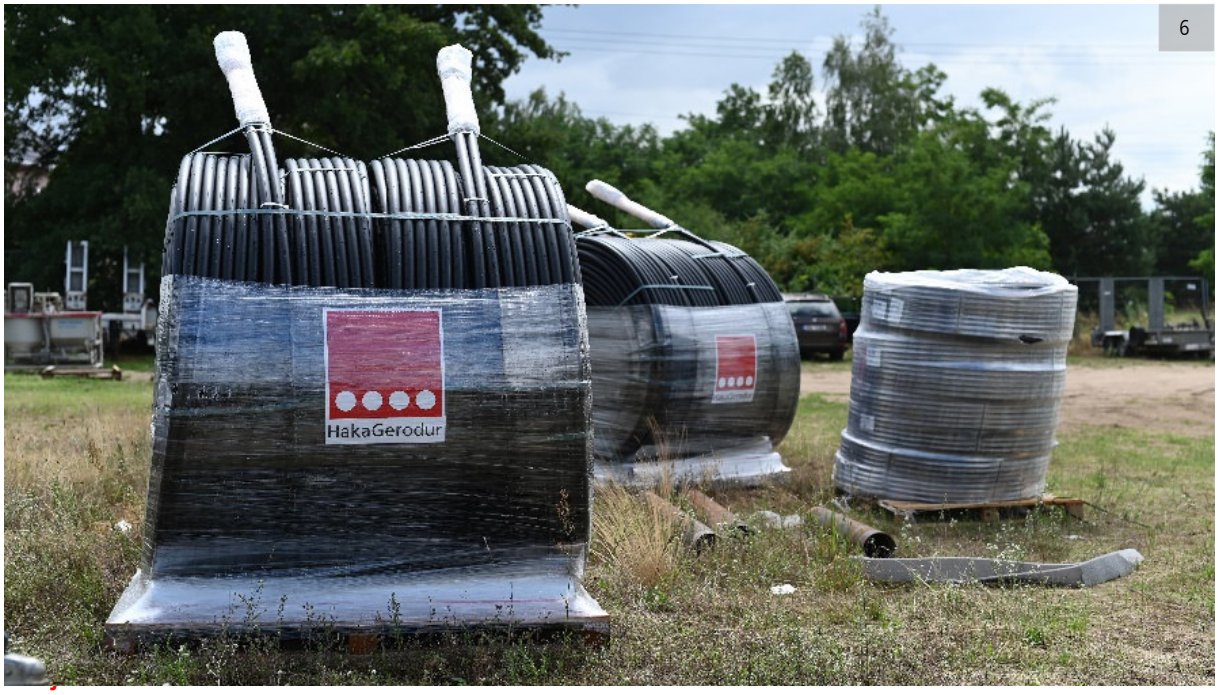

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Construction site
New building for Weinböhla grammar school
Köhlerstrasse 53
D-01689 Weinböhla

Grammar school client/project owner

Rahn Education
Dr Rahn & Partner
Independent Schools
Gemeinnützige Schulgesellschaft mbH
Salomonstrasse 10
D-04103 Leipzig, Germany
www.rahn.education

Triple sports hall client/project owner
Municipality of Weinböhla
Rathausplatz 2
D-01689 Weinböhla, Germany
www.weinboehla.de

Design and approval planning
Aretz & Wisk Architekten PartGmbB
Verdener Strasse 50
D-31582 Nienburg/Weser, Germany
www.aretzundwisk.de

Drilling company

ERDWÄRME & BOHRTECHNIK GmbH Sachsen
ROTOTEC CLEVER GEOENERGY PIONEER

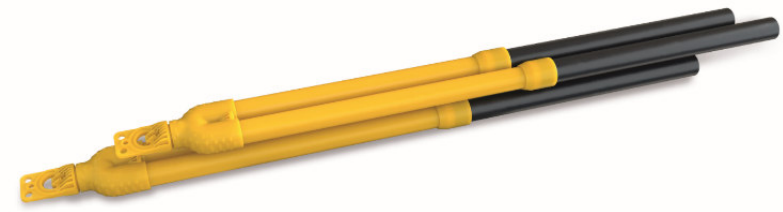
Erdwärme & Bohrtechnik GmbH
Wilhelm-Liebknecht-Str. 1a
D-09337 Hohenstein-Ernstthal, Germany
www.erdwaerme-bohrtechnik.com

General contractor
GOLDBECK Ost GmbH
Schulgebäude national Branch Office
Herlasgrüner Strasse 78
D-08233 Treuen, Germany

Products used

- 12 GEROtherm® FLUX 43 geothermal probes up to PN32 in PE 100RC de 43 mm, length 330 metres
- 12 GEROtherm® grouting tubes PE-HD de 32, length 332 metres
- 1 GEROtherm® FLUX geothermal probe up to PN32 in PE 100RC de 43 mm, length 350 metres
- 1 GEROtherm® grouting tube PE-HD de 32, length 352 metres
- 13 GEROtherm® PUSH-FIX impact-resistant sleeves

1. GEROtherm® FLUX geothermal probe on the reel
   (Image source: HakaGerodur AG)
2. GEROtherm® grouting tube on the reel
   (Image source: HakaGerodur AG)
3. Lorry with drilling material and compressor
   (Image source: HakaGerodur AG)
4. GEROtherm® FLUX geothermal probes, during installation
   (Image source: HakaGerodur AG)
5. GEROtherm® FLUX geothermal probes with PUSH-FIX and extension weight
   (Image source: HakaGerodur AG)
6. GEROtherm® FLUX de 43mm geothermal probe and GEROtherm® grouting tubes ready on the construction site



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