"Who invented it?"

Switzerland – Jonschwil, Aldi Logistics Centre

Project Development

The Task

The production of foundation piles for a new logistics centre with attached office buildings over an area of approx. 140 x 160 m.

The Challenge

- **The production of approx. 1,730 drilled piles (diameter: 610 and 813 mm) corresponding to a total drilled depth of approx. 30,700 m**
- **Construction period: 4.5 months**
- **Proof of a higher level of load capacity in granular soil for piles produced using the double rotary drilling method – compared with empirical values relating to the norm as well as to the Kelly drilling method**

The Subsoil

The area to be built on is located on the site of a former gravel pit. Down to a depth of approx. 14 to 17 m there are layers of backfilled soil which are not able to support a load. The drilled piles will be established in the medium-dense gravelly sands beneath.

The Implementation

The general working method and the advantages of the double rotary drilling method are explained in the report on the project "Mainz-Kostheim, SCA Paper Factory". In the case of Jonschwil the high performance capabilities of this method were proved once again. By using two double rotary drilling units, an average daily production of approx. 250 m per unit was achieved, with a top production of up to 300 m.

Dynamic pile stress tests using the CAPWAP process demonstrated an increase in load capacity of approx. 50 % compared with the empirical values of DIN 1054:2005-1 using the Kelly drilling method. In particular in some cases the specific peak resistance was doubled. It was proven that an enormous saving potential is available and that it is thus possible to produce drilled piles at a considerably reduced cost.