Kurt Fredrich
Spezialtiefbau GmbH
Zur Siedewurt 2, 27612 Bremerhaven

Tel.: +49 – 471 – 97 447 0
Fax: +49 – 471 – 97 447 44
Mail: info@kurt-fredrich.de
Web: www.kurt-fredrich.de

Energy Piles

In the last few years, the demand for thermal energy and cooling energy to acclimatise buildings has increased dramatically. At the same time, so has the demand for using environmentally-friendly, regenerative energies. A resource-saving solution is the use of energy piles, a combination of piles and geothermics.

The basic idea is to use the piles simultaneously to excavate the construction load and to obtain thermal heat from underground.

Piles are constructed for the foundation of constructions, e.g. where the foundation is not very capable of bearing a load in the area close to the surface. As a result of the piles, it is ensured that the construction loads are safely passed to sturdier soil layers that are more capable of bearing a load. Depending on the soil conditions and the load requirements, the required pile lengths tend to be between 15 and 30 metres. The temperature of the earth at these depths is about 10 - 12 °C in Centr al Europe.

By installing collector pipes in the pile shaft, this geothermal energy can be used. To do this, pipes are generally attached to the reinforcement cage. The number of pipes and the pipe diameter are determined by the energy that is to be achieved. In principle, double or fourfold configuration with diameters of 25 mm or 32 mm is sufficient. Using suitable thermal pumps, the thermal energy is produced. Vice versa, this principle can also be used for cooling, by delivering excess heat to the foundation.

The decisive factors for success are the professional installation of the pipes and the careful transportation and installation of the reinforcement cages. In addition, the piles must be chiselled with the utmost care so that the pipes are not damaged.

Advantages of energy piles:

- Environmentally friendly, as approx. 75 % of the energy is produced from the ground.
- Simultaneous use of foundation elements for energy production.
- No additional space is required

reinforcement wiht double configuration

Pipe redirection with electric welding sleeves