

Norddeutsche Landesbank

Eco-friendly and economic overall energy system for cooling and heating, utilizing energy piles and thermo-active ceilings. enercret's contribution to the Kyoto Protocol



Norddeutsche Landesbank, Hannover – Germany



enercret installation:

The ground is used as a source and a storage medium for cooling/heating energy which is tapped by circulating water through pipe circuits embedded in the foundation piles.

The water absorbs the cool ground temperatures through the concrete and transports them to the central cooling/heating system. When cooling is required, this temperature (13 °C in central Europe) is used directly. During the heating period, heat is extracted with the aid of a heat pump.

122 cast-in-situ concrete piles, each measuring 90 cm in diameter and approx. 20 m in length and rigged with 4 loops, were used for the absorber pile installation. The 122 circuits were then connected up to the manifold via connecting lines. The system consists of some 37 km of piping.

In order to utilize the cooling/heating energy in the rooms, water is circulated through absorber looped pipe units incorporated in the concrete ceilings. The eight ceiling slabs house 505 absorber units comprising 77 km of piping.

Capacity of enercret installation

cooling capacity	350 kW
heating capacity	150 kW
annual cooling output	80 MWh
annual heating output	80 MWh