Geothermal heating

Geothermic is the science that studies the earth's heat. The earth´s heat content (enthalpy) is 10^{31} Joule and the energy the earth sends out in the atmosphere is double that what we consume. Today we only use a small fraction (0,07%) of the available geothermal energy available. A great untapped resource is at our disposal.

By using heat from geothermal water we have a cheap and environmentally friendly method for heat generation.

The ground is an inexhaustible source of heat and the seasonal variations in the soil temperature is reduced as depth increases.

At depths of 15 to 18 meters, the ground's temperature will remain absolutely constant year round at 9-12 °C. As we go deeper, the temperature will not only remain constant, but will increase by an average of 3 °C every 100 meters.

Geothermal heat is used in two major areas of application:

- Direct use of geothermal energy, involving geological anomalies or volcanic activity that provide a source of steam (which can be used to produce electricity) or hot water for heating buildings and tap water
- Low enthalpy geothermal energy, where the subsoil or ground water is used as a thermal reservoir in combination with heat pumps.

Especially in the low enthalpy geothermal energy, growth has been spurred by the availability of increasingly efficient heat pumps. With current technologies, using heat pumps is very safe and requires no additional energy from other sources (e.g. natural gas boilers) to cover consumption peaks or situations where performance is reduced.

Since the geothermal water often contains chemicals and solid particles aggressive to the plate it is important to select suitable plate materials for the main heat exchanger. Titanium or SMO are often used because of high content of calcium. Gasketed plate heat exchangers are often the preferred solution due to good serviceability, maximum heat transfer, high capacities and possibilities to increase or decrease the capacity.