Modern ceramic tile-laying products and geothermal technology in one building

Following environmental core values Butech decided use geothermal energy for heating and cooling. The result is impressive: 75 % energy savings!

Modern ceramic tile-laying products and geothermal technology in one building

Butech - Faithful to its environmental commitmen

Butech was created in 2001 as part of the Porcelanosa Group, with the aim of supporting the work of all of the professionals involved in the ceramic tile-laying sector. The company offers a wide range of materials and construction systems covering the needs of homeowners, installation specialists, builders and architects. New building solutions led the company to offer such product like: profiles and complements for ceramics, adhesives for ceramic tiles, elastic join and seal material, waterproofing, facade systems, technical flooring, suspended ceilings, grates for shower trays, support and additive preparation, underfloor heating, geothermal.

Sustainable development is more than a priority for all companies and brands within Porcelanosa Grupo. Part of the group's philosophy is to lead in the introduction of innovative, environmentally friendly products and processes. Given its awareness of the importance of energy saving and energy efficiency in the consumption of resources, Porcelanosa Grupo dedicates ongoing investment to improving its facilities. In 2008 Butech decided build new headquarter, office and show room. Following environmental core values Butech decided use geothermal energy for heating and cooling.

The building of Porcelanosa Grupo


Ceramic tile-laying products show room

Thermia heat pumps - the solution for heating and cooling

Butech precisely, the company that develops and markets these systems has been the first to implement this system in its own building office. With more than 3,200 m^2, headquarter Butech have a geothermal system, 36 boreholes 120 meters deep, feeding the building's HVAC system throughout the year. Heating and cooling is provided by 7 independent ground source heat pumps operating in a master/slave mode.

Applied solution:

- 36 holes, each 120 meters deep
- 7 Robust ground source heat pumps, each with >42 kW capacity
- Heating and active cooling

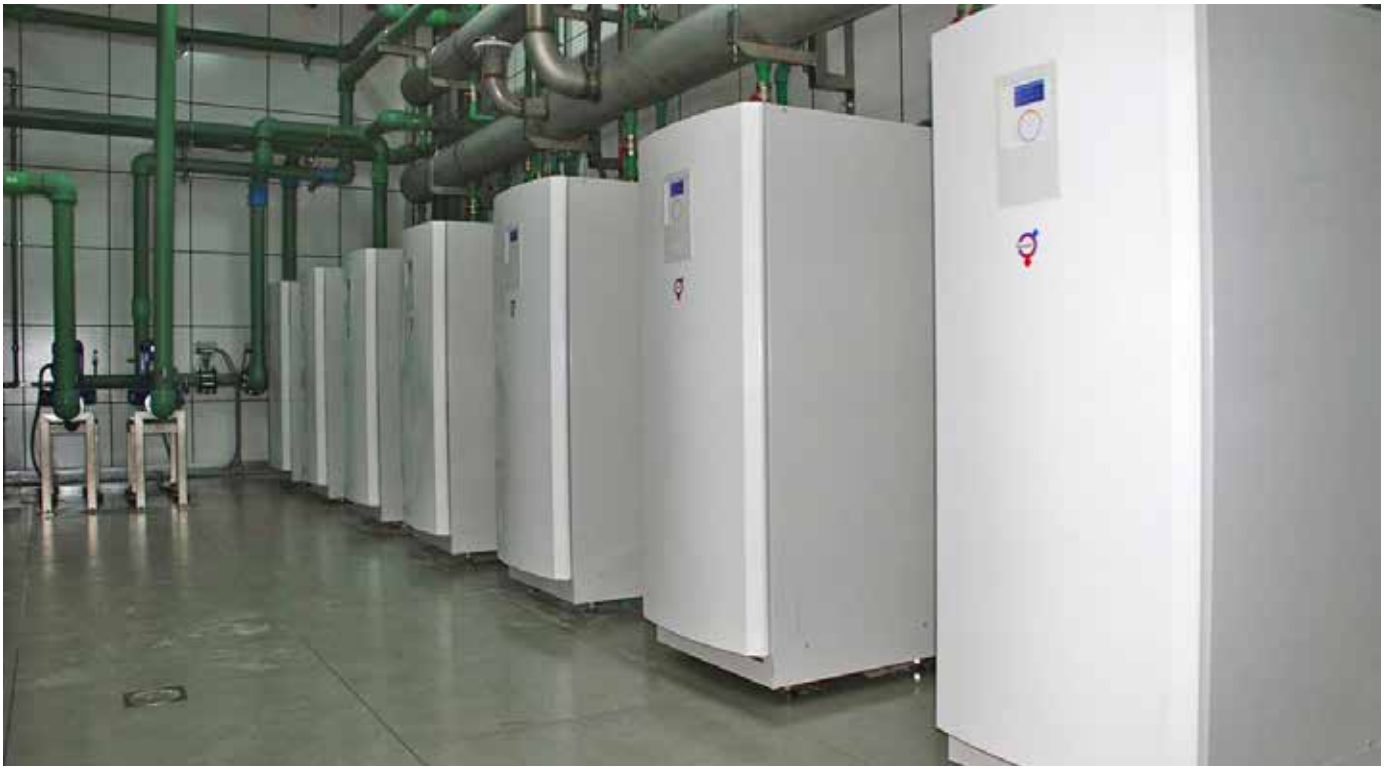
During the summer the heat pump can remove heat surplus from the office building and transfer into the ground. It means that the summer heat can be used as ground source recovery before the winter season starts. It is worth noticing that heating and cooling are provided simultaneously through fancoils of 4 pipes from the

Characteristicsof the building

- office area: 3.200 m^2
- heating, cooling and hot water

Applied solution: Geothermal heating

- 36 Boreholes, 120m deep
- 7 Thermia Robust 42 kW
- Seasonal Performance Factor 3,96
- 75 % of energy savings



The heating room with Thermia Robust ground source heat pumps

Brine manifolds

same source – the heat pumps and the ground. In the winter energy from the ground provides heating and in the summer the energy is taken out of the building providing cold trough the fancoils. The generated heat from the Thermia heat pumps is dissipated into the relative cold ground. This way to dissipate heat instead of blowing hot air trough fans is more efficient compared with traditional air-conditioning that needs to elevate the temperature above the outdoor temperature of a hot summer day in Spain.

In case the boreholes have to receive too much heat on a peak of cooling need the system can dissipate up to 150 Kw trough dry coolers on the roof of the building. No other auxiliary system is required i.e the geothermal solution is capable to supply 100% of the heating and cooling needs and the dry cooler is an economical solution in the case of need to dissipate extra heat without the need of more boreholes in the peak needs of cooling.

Energy efficiency, comfort and environmental foot print awareness

An evaluation was made during one year to measure the building needs and consumption of the system. A measuring system was installed to see the demand and supply of energy to the entire building.

The need for one year was 462.805 Kwh and the total electricity consumption of the installation including circulation pumps was 116.870 Kwh. This is a SPF of 3,96 and saving of 345.935 Kwh per year (74,75% energy saving!)

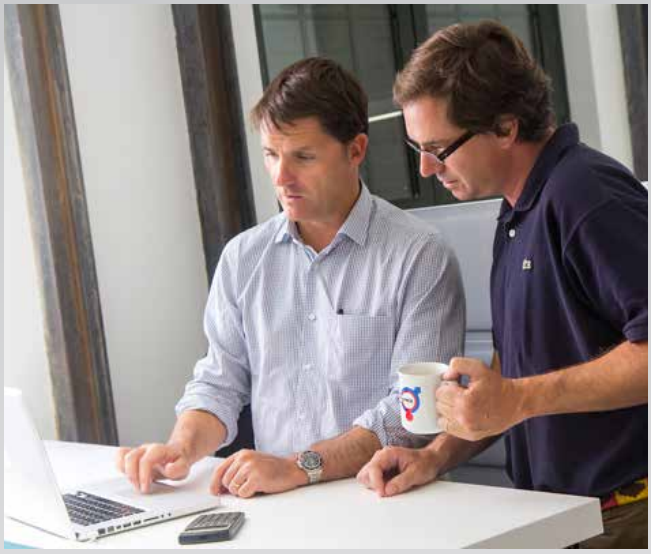
'The customers willingness to innovate and the solutions provided by Thermia made it possible for Butech to pioneer in Spain with a high performance geothermal system'

says Miguel Madero Wage, General Director at Girod Geotermia

Girod Geotermia - experienced partner in renewable energy on the Spanish peninsula

Girod Geotermia is the distributor of Thermia in Spain with more than 600 installations since 2007 made in all types of climates on the Spanish peninsula. The highly qualified technical support and network of local installers guarantee the correct functionality of your Thermia installation. Girod Geotermia will design the best solution for your house or commercial property using the vast range of heat pumps offered by Thermia.

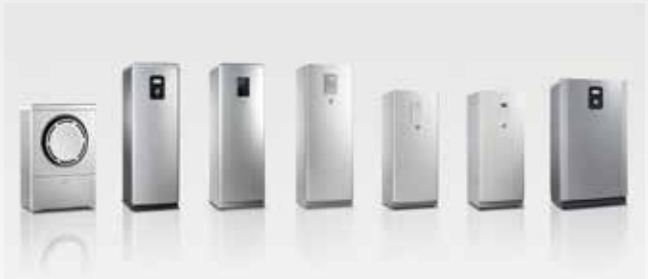
Ground source vertical or horizontal as well as air-to-water solutions delivering heat, cooling and hot water in the most efficient way. Girod Geotermia with the network of certified installers and drillers have successfully installed geothermal installations from 6 Kw for small houses to office buildings with more than 350 Kw. You can read more about Thermia projects in Spain and awards received for best installation in Spain at www.girodgeotermia.com



Girod Geotermia, Calle Campoamor 14, 28004 Madrid, Tel: +34 91 702 63 56, info@girodgeotermia.com, www.girodgeotermia.com

---

Thermia – heat pump manufacturer with 40 years of experience



With more than over 90 years of history and experience in the energy sector, Thermia Heat Pumps offer renewable energy solutions for any climate, anywhere in the world. All Thermia heat pumps are designed, manufactured and rigorously tested in Sweden where one of the most harshest European climates can be found.

Ever since the beginning, the driving force behind our business has been the philosophy of our founder, Per Anderson: “The products one releases must not only be the best of their time, but before their time, over time”.

At Thermia we are driven by this philosophy and our passion to deliver. For us every day is a new opportunity to create, build and serve a bigger purpose, for a greener and healthier planet, not only for ourselves but for everybody around us. Every challenge is Thermia’s opportunity to make life a little more comfortable for our customers.

Thermia Heat Pumps
Postadress: Box 950, 671 29 Arvika; E-mail: info@thermia.com Phone: 00 46 570 813 00;
Order phone: 00 46 570 847 72; **www.thermia.com**