



Hotel Hot Springs Medical & Spa benefits from Thermia heat pumps



Hot Springs Medical & Spa is located in the village of Banya, which is situated in the beautiful Razlog valley in the south of Bulgaria. The village of Banya is known not just for its wonderful climate but also for its healing mineral water, which is a rich resource for the residents of Banya and the many guests who visit the hotel complex alike.



Hot Springs Medical & Spa - Front View

Cozy place to stay

The Hot Springs Medical & Spa Hotel can accommodate 300 people in 139 lovely rooms divided into eight different categories. Each of the rooms has a balcony and an incredible view of the mountain or the forest. For the convenience of guests, the hotel features an excellent restaurant, a lobby bar, a children's playground for younger visitors and, of course, the unique spa and medical center.

The mineral water in the village of Banya has healing properties. Guests can enjoy this water by entering the spa center and relaxing in outdoor and indoor pools. In addition to the pools and mineral water, guests can also enjoy various saunas - starting with the traditional Finnish sauna and moving on to explore the bio sauna and a salt room with self-produced Himalayan salt. The spa also includes an ice room – known as 'the igloo' – and a classic Turkish hammam.

Energy-efficient heating and passive cooling

From the very beginning, the investors wanted the complex to use renewable energy systems that would provide the latest technologies in energy efficiency. The advanced heating and cooling



Apartment – Studio



Indoor pool



Sauna

system is therefore powered by geothermal energy provided by four Thermia ground source heat pumps. For this purpose, geothermal water with a temperature of 57-58 degrees Celsius is being used. Thermia's aim when designing the systems was to fully exploit the thermal energy of this geothermal water, which is a kind of secondary energy source.

From a natural temperature of 57-58 degrees, the water is cooled to 35 degrees using a cascade system with heat exchangers. To extract maximum value from this

heat, the hotel complex relies on a Thermia Mega heat pump. The primary role of this device is as a water-to-water heat pump, then as a heat inverter and finally as a means to provide full monitoring of all system operating parameters. In this way, the Thermia Mega enables the hotel to use all the thermal energy and bring the geothermal water to a temperature of 10-12 degrees once it has done its job and leaves the system.

The systems are designed in such a way as to use Thermia Mega's ability to cool the hotel rooms and

common areas, for example, while simultaneously using waste heat from the condenser to heat the two pools - one outdoor and one indoor. In this way, we effectively use all the power that geothermal water can provide us with by means of Thermia Mega heat pumps.

Another benefit of Thermia Mega is that it enables the installation to operate at very high evaporation temperatures, which provides energy coefficients of 4.0-4.5. As a result and because of the way the system was built, 80% energy savings are achieved compared to the use of gas.

'...80% energy savings are achieved compared to the use of gas...'

Associate Professor PhD Ing. Tsvetan Bozhkov, Technical University of Sofia



Heating room with two Mega ground-source heat pumps

Fact Box

Location:

village of Banja, Bulgaria

Type of building:

Spa and wellness center

Characteristics of the building

- Heated area: 30 000 m²
- Heating and cooling
- Heat demand: approx. 700 kW
- Cooling demand: approx. 350 kW

Applied solution:

- Renewable heating and cooling
- 4 x Thermia Mega XL 21-88 kW

Completion date: 2017

GREEN THERM BG – A LEADING PARTNER IN HEATING AND RENEWABLE ENERGY IN BULGARIA

Green Therm BG is a company that specializes in renewable energy sources. Green Therm represent Thermia in Bulgaria by supplying heat pumps for small houses, as well as for large hotels and office buildings.

Company provides complete energy solutions, not just in relation to heat pumps, but also in terms of solar energy and energy-efficient ventilation.

Wide network of partners throughout Bulgaria, including installers and drilling companies. Green Therm always work with the best planning and engineering companies, so we can offer the best solution for everyone.



Green Term BG, Sofia 1407, PO Box 45, +359 988 85 20 30, office@greentherm.bg

THERMIA THE ULTIMATE ENERGY PROVIDER SINCE 1923



Pioneering heat pumps

For the last 50 years, we have dedicated all our resources and knowledge to developing and endlessly refining one product: the heat pump. Our focus on geothermal energy has given us world leading knowledge in heat pump technology.



Engineered with passion

Developing truly sustainable renewable energy solutions can only be achieved with passionate, dedicated, and uncompromising experts. Some of Europe's most highly qualified engineers can be found in our own R&D center.



Born in Sweden

All our products are designed, manufactured, and tested in Sweden using the latest technology and the highest quality components. All components inside our ground source heat pumps are made in Europe by world-leading industry specialists.

