



aquatherm
state of the pipe

PROJECT REPORT: COMBINED SYSTEM WITH MANY ADVANTAGES



PROJECT:
Miraggio Thermal Spa Resort

LOCATION:
Kanistros, Greece

COMPLETION:
2016

APPLICATIONS:
HVAC, potable water

PRODUCTS:
aquatherm blue pipe
aquatherm green pipe

THE CHALLENGE

Fitting into the hotel's sustainable concept the design team sought a piping system that would be eco-friendly, leak-free and long-lasting to connect the geothermal plant and the drinking water area.

THE SOLUTION

Thanks to their long service life, excellent environmental compatibility and recyclability, aquatherm products are ideally suited for the hotel's "green" philosophy. In addition, they can be installed quickly and safely.

AQUATHERM ADVANTAGES:

- Safe and fast connection of the geothermal plant by aquatherm piping
- Shorter assembly times due to prefabrication
- Sustainable material fits perfectly into the "green" concept

"GREEN" LUXURY HOTEL SAVES ENERGY AND WATER WITH THE HELP OF AQUATHERM

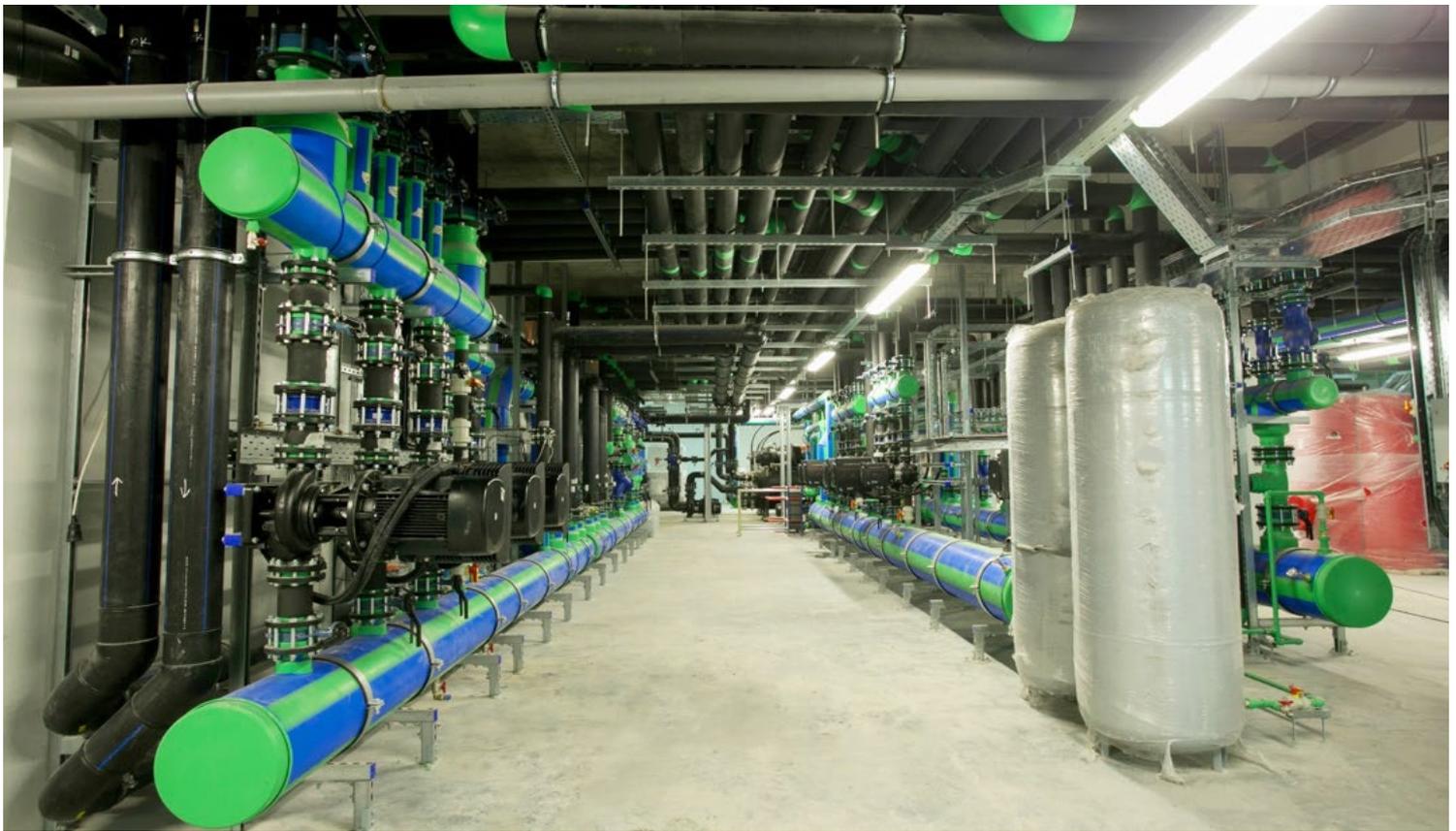
Sustainability is a central theme at the Miraggio Thermal Spa Resort. The five-star hotel in Kanistros on the Greek peninsula of Chalkidiki, has more than 300 luxurious rooms and suites, a thalassotherapy and spa centre, 48 private pools and 3 community pools, 5 tennis and volleyball courts, an amphitheatre and a marina for 81 boats, and has received awards for its "green" design. aquatherm products, which were used in many areas, substantially contributed to this.

The electromechanical design, by Yfantis Engineering, was based on minimizing the environmental impact of the project throughout its life cycle. The main "green" feature of the project

is a combined system of geothermal exchange, energy recovery and potable water production. This integrates subsystems that require seawater for their operation, such as geothermal coolers, geothermal heat pumps, desalination plants, water-cooled main freezers, the thalassotherapy centre and the swimming pools.

The subsystems are interconnected in such a way that the same mechanical equipment and infrastructure can be used for more than one application, resources such as energy and water can be reused, and waste heat can be recovered between the subsystems. This means that less electricity and fossil fuels are consumed and the hotel supplies itself with the precious resource





of water. An additional benefit is the reduction of installation costs, as the subsystems share the same equipment and infrastructure. In addition, the hotel complex benefits from long-term reliable operation without optical or noise interference, as all facilities are underground and therefore not subject to corrosion by salty sea air.

The cleverly combined system can simultaneously cover the following needs:

- Cooling, heating and humidity control (air conditioning)
- Underfloor heating
- Domestic hot water heating
- Swimming pools' heating
- Potable water production
- Seawater supply for Thalassotherapy Center
- Seawater and brackish water supply to fill swimming pool (backwash and evaporation losses)
- Main freezers' heat rejection

The sustainable concept at the Miraggio Thermal Spa Resort is paying off: Since its completion in 2016, the energy savings compared to a conventional system is around 216,000 euros per year, as electricity and gas consumption are significantly reduced. CO₂ emissions are reduced by 632 tonnes per year compared to a conventional system. In addition, the local community benefits from the green concept by a reduced burden of the electricity transmission network and a zero burden on the water supply network.

SAFE AND FAST INSTALLATION WITH AQUATHERM PRODUCTS

aquatherm blue pipe provided a problem-free and fast installation of the geothermal plant of the hotel. Thanks to its safe and virtually leak-free connections, it meets the safety requirements of an underground piping system and is therefore ideally suited for the use of geothermal energy. The piping system, which is made of polypropyl-

ene, also fits perfectly into the green concept of the Miraggio Thermal Spa Resort, as it is not only characterized by a long service life, but also by a naturally very good environmental compatibility and recyclability.

aquatherm blue pipe is corrosion-resistant and unaffected by the aggressive medium seawater thanks to its hydrophobic properties, in contrast to metallic piping systems. Prefabricated components allow assembly and installation time on site to be significantly reduced. The installation was made by Sychem.

aquatherm green pipe was used for the resort's potable water. Excellent drinking water quality is permanently maintained with this hygienic, odourless and tasteless piping system. It is not only corrosion-resistant but also physiologically and microbiologically safe. Its technical suitability and performance has been proven worldwide for decades.



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