Hotel Opus

Ground water cooling system

Horsens, Denmark

Description of plant

A ground water cooling system, using ground water as refrigerant and then returning it to its subterranean source, controls the cooling system at Hotel Opus in Horsens, Denmark. The system was developed by the Danish company EnOpSol. IGSS is the SCADA system controlling the cooling system throughout the entire hotel, its conference rooms, its bed rooms etc.

The new Hotel Opus in Horsens, Denmark, has 4 stories with 132 rooms, a restaurant, and conference facilities for up to 400 persons. The first stage measures 11.200 m² as well as 2.600 m² parking basement.

About ground water cooling plants

Since 1996 at least 7 new ground water cooling plants with re-injection for cooling of process cooling water and ventilation air have been put into operation. A number of plants are currently being established and it is expected that the technology will become even more widespread in the future. This is because the plants achieve significant energy savings compared to traditional solutions, does not harm the environment and are comparatively noiseless during operation.

CUSTOMER CASE

The main components of a ground water cooling plant with re-injection are two wells and a heat exchanger. The ground water (which in Denmark has a constant temperature of approximately 9°C) is pumped from one well. Water is lead through a closed piping system through the heat exchanger, where it is heated 5-15°C before being lead back into subterranean storage through a re-injection well. Over time the heat from the ground water storage is lead by thermal conduction to the ground surface. This heat emission is slow as ground water storage works as a depot for heating storage.

The energy saving in these systems will normally be around 50 to 85% compared to conventional solutions.

IGSS

The configuration at Hotel Opus is a single user system with 200 objects.

System integrator is

NHL-Automation