

Solar and geothermal heating and cooling of the European Centre for Public Law building in Greece

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Abstract

The European Centre for Public Law in Legrainia near Athens in Greece is heated and cooled by a combined solar and geothermal system. The main components of the system are a saline groundwater supplying well, water storage tank for 6 h autonomy, inverter for regulating geothermal flow, heat exchanger, two electrical water source heat pumps placed in cascade, fan coils, air handling units, as well as solar air collectors for air preheating in winter. In addition, hot water is supplied to the building hostel by solar water heaters. Monitoring of the energy system during heating showed excellent energy efficiency and performance.

Author Keywords: Heat pumps; Solar air collectors; Groundwater; Heating; Cooling