

RESIDENTIAL NEIGHBORHOOD OBERFELD, OSTERMUNDIGEN (BERN) - SWITZERLAND

Wohnsiedlung Oberfeld, Ostermundigen (Bern)



Fig 1: Model of the neighborhood Oberfeld in Ostermundigen.



Fig 2: Pictures of the realized neighborhood in Oberfeld in Ostermundigen.

**” ENERGY FOR HEATING AND
COOLING FROM THE SUN AND
EARTH“”**

Summary of the project

The building cooperative Oberfeld has realized a particular residential complex on a former military shooting range site in Ostermundigen: Three buildings comprising in total 100 apartments were entirely designed to fulfill sustainability criteria, such as optimal use of solar energy and good insulation properties. The buildings are built out of wood and other natural materials according to the Swiss Minergie®-P-ECO standard. Sustainable mobility of the residents was equally important as the use of natural materials and low energy consumption in the concept, so that the residential complex could be planned as a car-free area. The acceptance of the residents was surprisingly good.



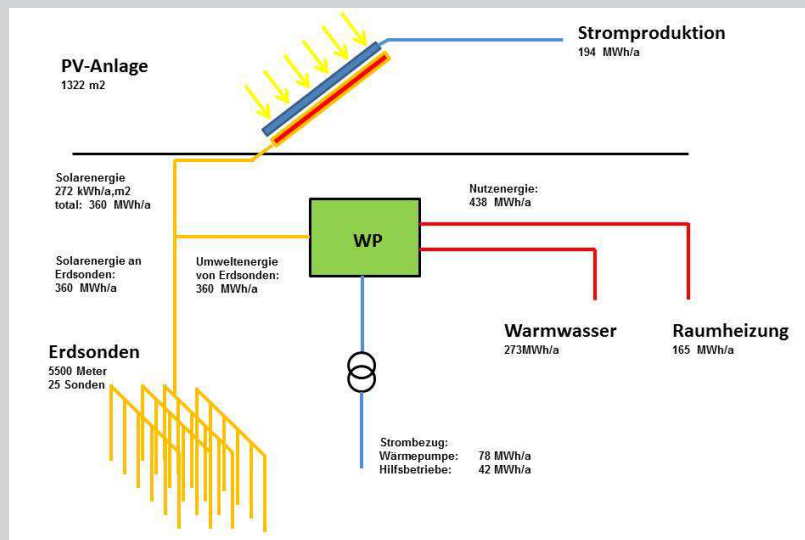


Fig 3: Energy concept and key data of the neighborhood Oberfeld.

Detailed description of the project

The energy-efficient design can also be seen in the energy supply concept. The energy required for space heating and hot water production is supplied by means of a heat pump system. About 1 300 m² of installed hybrid collectors generate electricity and collect solar heat. The excess heat is transferred to the ground and stored by means of 25 borehole heat exchangers with a total length of 5 500 meters. When required, thermal energy is pumped from the ground and retrieved to the heat pumps. The heat pump alone (without pumping energy) reaches an annual coefficient of performance of about 5.6. With all the pumping energy required for the system, the annual performance of the heat pump system lays at about 3.6.

The photovoltaic system produces approximately 194 000 kWh electricity per year. The excess electricity, around 65 000 kWh/a, corresponding to the electricity consumption of approximately 20 apartments, is available to the residents.

FACTS ABOUT THIS PROJECT

Building type: Apartment (residential) buildings

Heated floor area [m²]: 100 apartments

Installed heat capacity [kW]: 200 kW

Total heat demand: 438 MWh/a

Heat source: Heat pumps and solar heat from hybrid collectors stored in borehole heat exchangers

Investment cost: 1 700 000 CHF

Participating countries: Switzerland

Time frame: 2012-2013

Project organisation:

Project leader: Energie Wasser Bern

Project partners: Energie Wasser Bern

Link to web page or report:

<http://www.wohnenimoberfeld.ch/web/rubriken/energie> (in German)

Contact information

Martin Bretscher, Energie Wasser Bern

+41 31 321 92 91

martin.bretscher@ewb.ch



IEA Technology Collaboration Programme on
Heat Pumping Technologies (HPT TCP)