

## WP 3 - D19 (FEWE, POLAND)

## Best practice example No. 1

## General data

Name of the building :	Single family residential building
Country :	POLAND
Address :	ul. Graniczna 49 j 41-408 Mysłowice
Google Earth link (50 m) :	
Google Earth coordinates :	N 50° 12'59.8" E 19° 05'64.7"
Building owner/user :	Private estate, 5 person family
Building type:	Residential, single-family

## Building information

Picture of the building:  
(103 mm width)



Description of the building: (architecture/construction) <i>Please describe location                  insulation, window                  efficiency, building                  materials → summarize                  highlights of building</i>	Concrete foundations, cross-shaped, between the foundation slabs 2 ground heat exchangers installed filled with manually flushed gravel Walls - $k < 0,30$ [W/m <sup>2</sup> K], Roof - $k < 0,25$ [W/m <sup>2</sup> K], Windows - $k = 1,1$ [W/m <sup>2</sup> K], Heat pump air - water $Q_g = 8$ [kW], $\eta = 3,2$ , supplied from ground heat exchanger installed in the garden for heating and hot tap water purposes, heating water reservoir 0,6 m <sup>3</sup> , floor heating, convection standard fire-place installed in the central part of the building, gravity ventilation
Year of construction	2003
Total gross area (m <sup>2</sup> )	120
Volume (m <sup>3</sup> )	312
No. of floors	2
Glazed surface level	15%

### Cooling concept

Cooled area :	60 m <sup>2</sup>
Cooling approach (description) :	Cooling of inlet ambient air resulting from flow through a gravel-bed submerged in the ground. External intake, 2 ground heat exchangers with periodical operating scheme located between the foundations of the building, filled with flushed river gravel. The installation operate all over a year: Summer – air cooling Winter – air heating Further planning: mechanical ventilation with heat recovery and vacuum solar collector.
Annual electricity consumption (kWh <sub>el</sub> /m <sup>2</sup> ):	No data

### Building concept

Comfort	High
Solar protection	Direct protection – external window blinds Windows $k=1,1$ [W/m <sup>2</sup> K], In case of high outdoor temperatures the air inlet installation with ground heat exchangers is put on. Filling the foundations with flushed river gravel and

	position of the fire-place in the central part of the building an excellent accumulation effect has been achieved.
Lighting performance:	Medium
Office equipment:	Standard equipment
Regulation:	

### Links and download files

[http:// www.taniaklima.pl](http://www.taniaklima.pl)

### Contact

- Witold PIECHA [+48] (32) 201 61 68
- Mariusz BOGACKI [+48] (32) 203 51 14