

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 ² K], Roof – $k < 0,25$ [W/m ² K], Windows – $k = 1,1$ [W/m ² 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 ³ , floor heating, convection standard fire-place installed in the central part of the building, gravity ventilation
Year of construction	2003
Total gross area (m ²)	120
Volume (m ³)	312
No. of floors	2
Glazed surface level	15%

Cooling concept

Cooled area :	60 m ²
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 _{el} /m ²):	No data

Building concept

Comfort	High
Solar protection	Direct protection – external window blinds Windows $k=1,1$ [W/m ² 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)

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