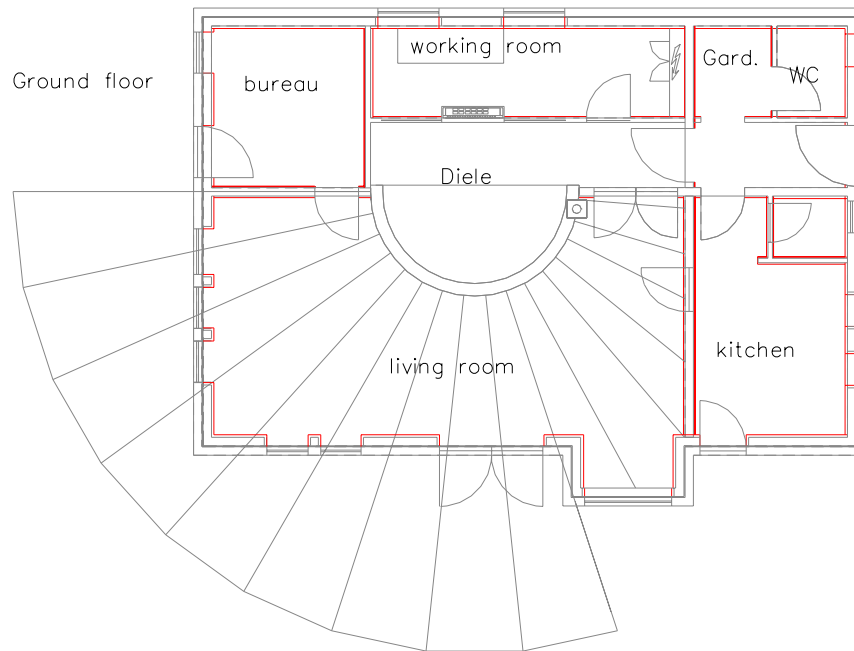


Passivhouse in
Gaspoltshofen,
Austria





The project

This single family house has been constructing as a privat built-house and will be finished in 2004.

Marketing strategy

none

Objectives - Goals

The main goal was to construct a low energy house in respect to economic and ecologic issues. In addition a further supposition of the owners was an attractive and appealing outfit.

Building construction

Most parts constructed as prefabricated segments moveable by crane only

Of course sustainability and the use of material of the region was granted.

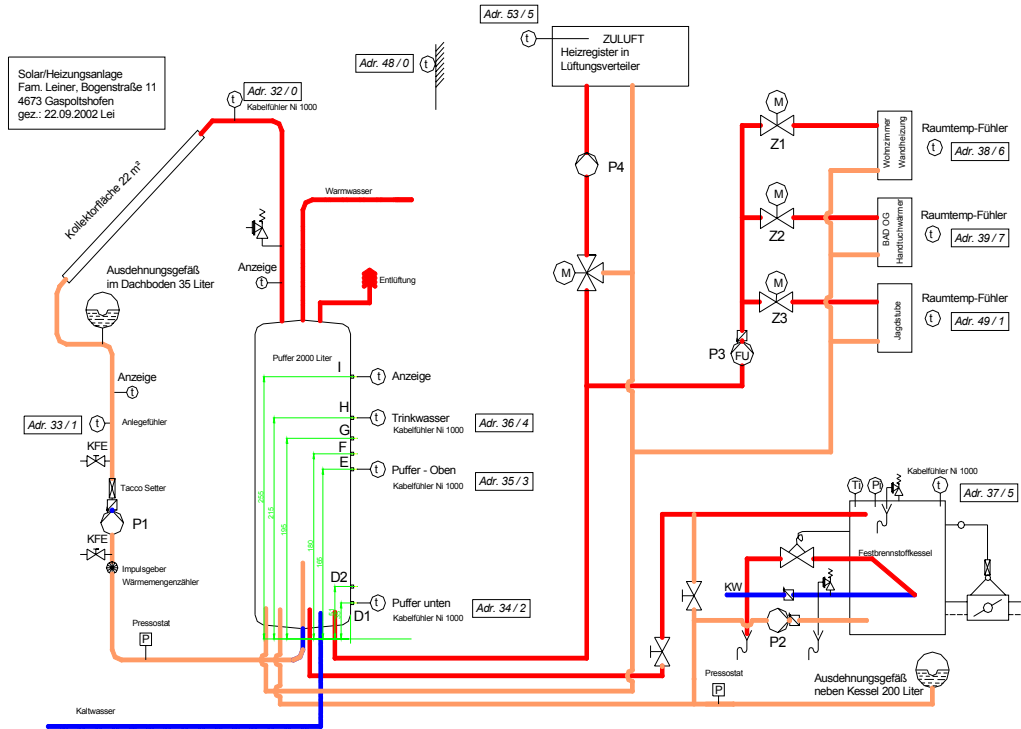


(e.g.: lambswool for insulation and timbers of spruce and larch came close to the location)



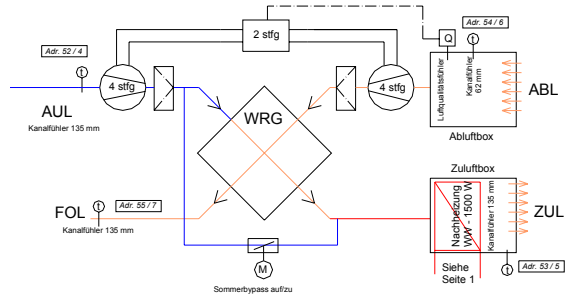
Construction type and material use, U-values, innovative elements.

Construction	Material	U-value
Wall	Timber, lambswool, cellulose	0,11
Ceiling	Timber, cellulose	0,09
Windows	Timber, cork, 3-layer-glass	0,78



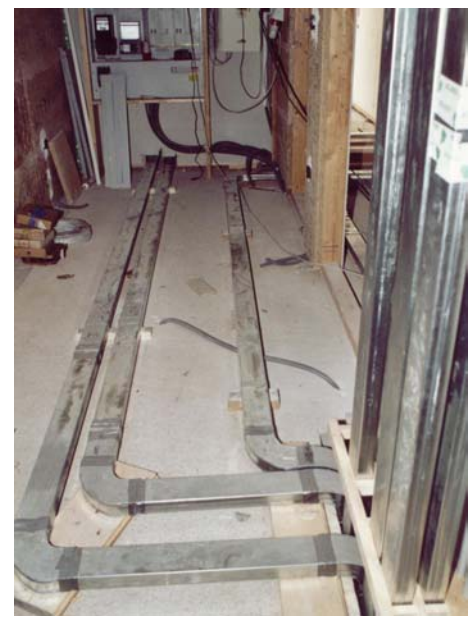
Technical systems

- PV – supply 2,8 kW
- Thermal collector 22 m²
- storage tank 2000 liter
- bio mass – boiler
- ventilation system
- rain water storage equipment
- EIB control



Energy performance (demand per year and m²)

	Reference building (standard house 2004)	House Leiner Monitored (m) Calculated (c)
Heating of space and Ventilation air	80 kWh/m²a	14 kWh/m²a (m + c)
Domestic hot water	25 kWh/m²a (4 persons)	2,5 kWh/m²a (c)
Solar pump		0,5 kWh/m²a (m +c)
Lighting	7 kWh/m²a	3 kWh/m²a (c)
Electrical appliances	12 kWh/m²a	5 kWh/a (c)



Ventilation pipes

Planning tools for LCA, energy performance, solar energy design and more

The overall performance (electricity, heating, domestic watersupply,...) was calculated by the PHPP of Dr. Feist (Darmstadt).

Costs and benefits

	Standard house (in k€)	House Leiner (in k€)	benefits
Building, incl. Wintergarden, PV, all technical equipment (e.g. PV, Solarthermal appl., rainwater facility,...) , cellar	350	400	Extraordinary space climate due to Plaster made of loam, loambricks, lambswool, timber, Energy savings in fact due to wintergarden and heating/cooling system by air

Innovative products

Windows and doors	Cork-insulated frames and 3-layer-Glasses
Ventilation and cooling	Heat recovering by interchanging and cooling with bypass and 40 m pipe digged in earth
Controls	All systems are controlled electronically by one system (programmable control panel)
Domestic appliances	Low energy lamps and refrigerator, washing-machine with warmwater supply by solarthermal equipment
Space heating and domestic hot water	Solar thermal collector 22 m ² and bio-mass-oven. Distribution of heat by air.
Electricity	Roof-integrated Solar PV: 2,8 kW

Other information

PROJECT OWNER	Ing. Maximilian and Erni Leiner
Financer and contact person	e.leiner@eduhi.at
Architect	Dr. Wiesmayr
Technical issues and coordination	Ing. Maximilian Leiner
Awards	Winner 2002 solar award www.eurosolar.at/solarpreis_2002.html

www.iea-shc.org

www.ecbcs.org