

Object name

Karl Johans väg, Frillesås**Sweden**

Object photo



Object description

In Frillesås, south of Kungsbacka, Sweden, three multifamily houses containing 12 rental apartments in two storeys have been built according to the Swedish passive house criteria.

The buildings have a load bearing structure with a well insulated wooden and steel beam construction. The external walls are a prefabricated wooden construction, insulated with polystyrene on site.

Each apartment has a separate small ventilation system with an air-to-air heat exchanger. The heating battery in the heat exchanger is connected to the district heating system. To ensure high comfort in the bathrooms there is a small heating coil installed in the floor in every bathroom.

The domestic hot water is heated by an active solar system, placed on the roof on the apparatus building. Additional domestic hot water is supplied by district heating.

Ref: Passive houses in Sweden, Experiences from design and construction phase, Ulla Janson, Division of Energy and Building Design, Department of Architecture and Built Environment, Lund University, Faculty of Engineering LTH, 2008, Report EBD-T--08/9

Fact sheet

Apartment house in Frillesås

Treated Floor Area	330 m ²
Number of apartments	12
Completion date	2006

Energy standard

Heat requirement / year (20/22 °C)	9,6/12,6 kWh/m ² a
Heat load (20/22°C)	8,5/9,4 W/m ²
Primary energy requ.	not calculated
Air-tightness (n ₅₀ -value)	0,35 1/h
Building type	Timber & steel construction

U-value

Exterior wall	0,11 W/m ² K
Roof	0,08 W/m ² K
Basement floor /	W/m ² K
Floor slab	0,11 W/m ² K
Windows / average	0,7 W/m ² K

Specification ventilation system

Mechanical ventilation with one air to air heat exchanger ($\eta \sim 0.85$) in each apartment

Heating installation

District heating, solar collector

Construction costs	1200 Euro/m ²
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Building owner

Eksta Bostads AB

Architect/Planner

efem arkitekter / arkitekt Hans Eek

Photo credits

Ulla Jansson