

“Det Norske Hus” (The Norwegian House), Bo01 Malmoe, Sweden



Photo: Bjørn Larsen

Architectural integration of solar thermal energy systems

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Single-family house with solar collectors integrated in the façade

PROJECT

“Det Norske Hus” was the Norwegian contribution to “The European Village”/ the European housing exhibition Bo01 in Sweden in 2001. One of the main purposes of the exhibition was to promote sustainable ecological development. The exhibition presented national and international visions of how this can be achieved. The European Village consists of 14 houses, that were sold at the open market after the exhibition.

The house concept is based on ecologically sound principles and the use of existing, commercially available technology. It has a massive wood/solid timber construction and solar energy is used for DHW preparation and space heating.

Architect and developer aim for the building’s energy consumption to be 25% below the present (2000) Norwegian standard for low-energy buildings.



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Key figures

Living area:	144 m ²
Total heat demand:	67 kWh/m ² /year (reference house: 120 kWh/m ² /year)
Energy sources:	solar collectors, gas burner and electricity
Collector area :	16 m ² ,
Heat store:	2 m ³ , water
Auxiliary heating:	gas burner

Heating system

The solar combi-system is used for DHW preparation and space heating. 16 m² collector area covers 35% of the total heat demand in the building. The produced energy is stored in a 2000 litre storage tank (water) and used for heating water, added into the water based floor heating system.



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SOLAR COLLECTOR

Type:
Flat plate polymer collector
Solarnor

Dimensions:

Width: 600 mm,

Depth: 68 mm,

Length: 300 mm,

Weight: without water; 6,5 kg/m², water filled; 8kg/m²

ECONOMY

Collector price: approx. NOK 1600/m² / (Norway, 2005)

Solar gain: 3500 kWh/year

The energy consumption in "The Norwegian House" is 30% lower than in similar houses.



Photo: Bjørn Larsen

GALLERY



PHOTOS; Bjørn Larsen

- Built: 2001
- Architect: Bjørn Larsen
- Consultants: Aadnesen AS, Erichsen & Horgen AS, IBR-elprosjekt AS
- Project management: Selmer Bolig AS
- Entrepreneurs: Selmer Skanska ASA
- Address/Location: Malmö, Sweden
- Project period: 2001
- Type of project: Single-family house
- Read more: <http://www.be.no/beweb/info/andre/bo01/European%20Village.pdf>

