

Bjoernveien 119, Oslo, Norway



Picture source: Dahle/Dahle/Breitenstein AS

Architectural integration of solar thermal energy systems

Bjoernveien 119, Oslo, Norway

Multi-family house with solar collectors integrated into the façade

PROJECT

Multi-family house, 8 flats (130-170 m²) in two and three stories - total area 1868 m².

In the housings at Bjoernveien 119 in Oslo, the use of solar energy has been an important issue of the design. 100 square meters of solar collectors have been incorporated into the southern facade. In this project the produced energy will be stored and used to heat water that will flow into the water based floor heating system.

The dark, reflecting surfaces are attractive building elements, producing energy and acting as a sound barrier for road traffic.



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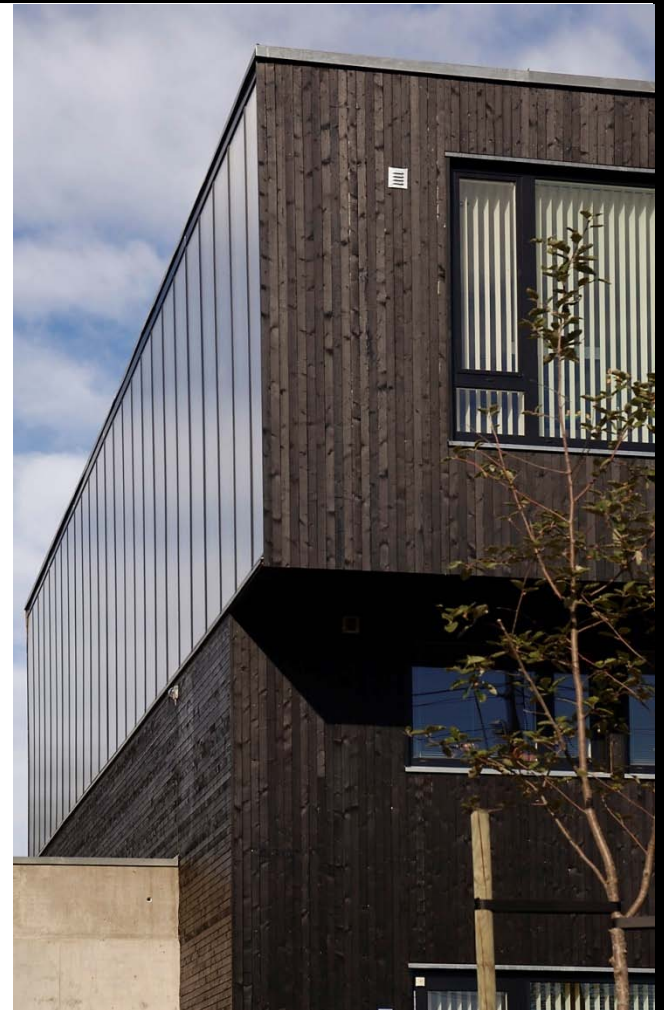
Key figures

Living area per house:	130 - 170 m ²
Total heat demand:	100 kWh/m ² BTA per year
Energy sources:	solar collectors, gas burner and electricity
Collector area :	92 m ² ,
Heat store:	8 m ³ , water
Gas burners:	2 x 24 kW

Heating system

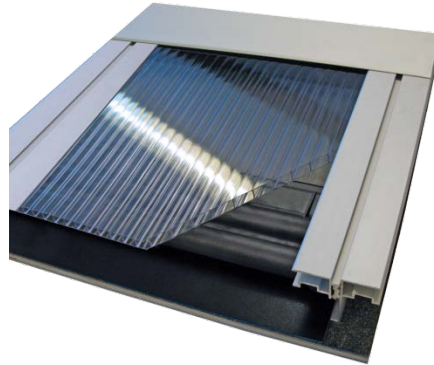
The homes rely on "green energy": In the southern sections, 92 square metres of solar capturing panel are fixed in continuance with the wooden panelling. The system gathers and stores the solar energy, which is used to heat water, and ultimately reaches the homes as hydrothermal floor heating. This system is supplementary to a central gas heater. Solar energy supplies about 25 per cent of these homes' energy requirements.

Picture source: Dahle/Dahle/Breitenstein AS



SOLAR COLLECTOR

Type:
Flat plate polymer collector
AventaSolar



Dimensions:
Width: 600 mm,
Depth: 66 mm,
Length: various
Weight: without water; 5,5 kg/m², water filled; 8,7kg/m²

More info about the solar collector:
www.avena.no/index.php?/eng/Solar-Energy/AventaSolar-solar-collector

ECONOMY

Calculated solar energy cost is about 0,60 NOK/kWh (7,3 €cent/kWh).

Solar gain: 25 000 kWh/year, approx 25% of the total energy demand for domestic hot water and space heating.



Picture source: Dahle/Dahle/Breitenstein AS

GALLERY



PHOTOS; Nils Petter Dale

- Built: 2006
- Project designers: Dahle/Dahle/Breitenstein AS
- Consultants: Will Arentz AS
- Project management: Backe Prosjekt AS
- Entrepreneurs: Bøhmer entreprenør AS
- Address: Bjørnveien 119
- Location: Oslo, Norway
- Project period: 2005-2006
- Type of project: Multi-family house



- Read more: <http://www.archdaily.com/91125/housing-bjornveien-dahle-dahle-breitenstein/>