

Passive house Rudshagen, Oslo, Norway



Picture source: Aventa AS

Architectural integration of solar thermal energy systems

Passive house Rudshagen, Oslo, Norway

Single-family house with solar collectors integrated in the façade

PROJECT

Rudshagen is located 15 km from the centre of Oslo. This is a site for new single family homes built according to the passive house standard. Presently (july 2012) 16 houses have been completed, and a large number of new houses are already in the planning and construction phase.

Parts of the south facing facade of the "solar house" is covered with a solar collector, net collector area is 19.5 m². The collectors are made of high performance polymer materials, and are easy to install due to light weight. Mounting of the collector field was accomplished in 4 hours with two active installers.

The solar system is a combined system, serving both space heating and domestic hot water preparation.



Picture source: OBOS

Key figures

Heated area :	116 m ²
Total heat demand:	61 kWh/m ² /year
Energy sources:	solar collectors, and electricity
Collector area :	19,5 m ²
Tilting angle:	90°
Heat store:	800 litre, pure water

Heating system

The solar installation is a combined solar system contributing to domestic hot water (DHW) and space heating. The system consists of, in addition to the solar collectors, a 800 litres heat store with tank in tank design. The intrinsic tank contains the domestic water, while the main store volume is filled with ordinary tap water, but without pressure. The operation is controlled by the temperature difference between the store and the collector, and as soon as the circulation of water in the collector is stopped, the water drains out and into the store.

Water based floor heating is used for heat distribution.

Heat store:



Collector installation:



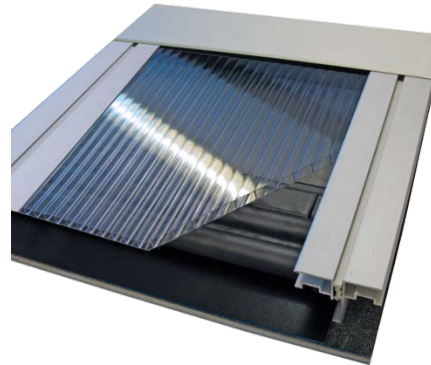
SOLAR COLLECTOR

Type:
Flat plate polymer collector
AventaSolar

The AventaSolar solar collector is especially designed for building integration as it is delivered as modular building elements, replacing regular roof- or façade covers.

Dimensions:

Width: 600 mm,
Length: various (up to 6m)
Weight: 7,7 kg/m²
Heat carrier: pure water



More info about the solar collector:

www.aventa.no/index.php?/eng/Solar-Energy/AventaSolar-solar-collector

Picture source: Aventa AS



GALLERY



PHOTOS;
Aventa AS

- Built/Completion:
2012
- Architect:
Spor Arkitekter AS
- Client:
OBOS
- Entrepreneurs:
Mesterhusbedriften
Håndverksbygg AS
- Address:
Marta Steinviksveg,
Mortensrud
- Location:
Oslo, Norway
- Type of project:
Single-family house



- Read more: <http://www.arkitektur.no/?nid=204946&pid0=151825&arch=204954&pid2=84682>