



Project information

Project type:	New build passiv house standard
Address:	Ranheimsveien 149 7056 Trondheim
End construction year:	2010
Building type:	Social housing
Persons in building:	-
Gross area BTA:	806 m ²
Net heated area:	608 m ²
Additional cost for eco-application:	57 €/m ²
Total building cost:	n.a.
Installed solar collectors:	15 m ²

Special ECO-technologies used:

- Passive house standard
- Extra thick insulation walls and ceiling
- Windows with low U-value
- Extra demands windproof construction
- District Heating
- Solar collectors

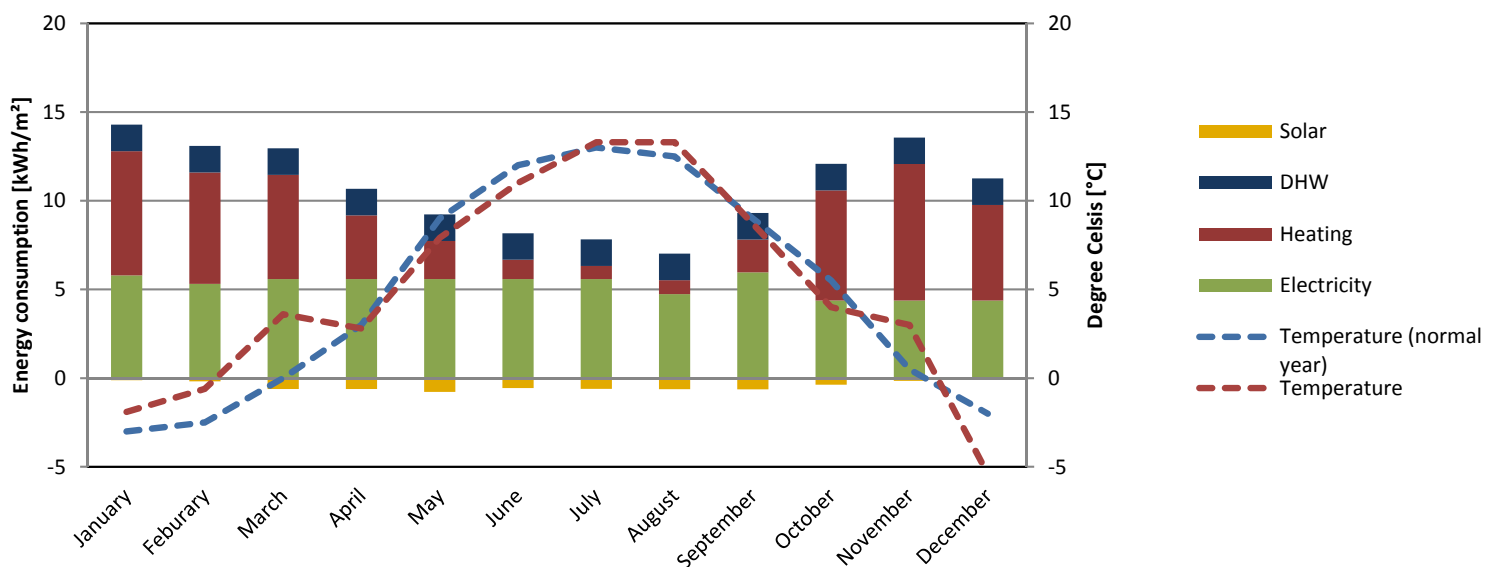
Solar collectors:

- Area 15 m²
- 6 panels
- Charges 2 hot water tanks of 500 liters each



Energy consumption

Energy Consumption 2012



ECO-City project partners

WHAT HAS BEEN DONE:

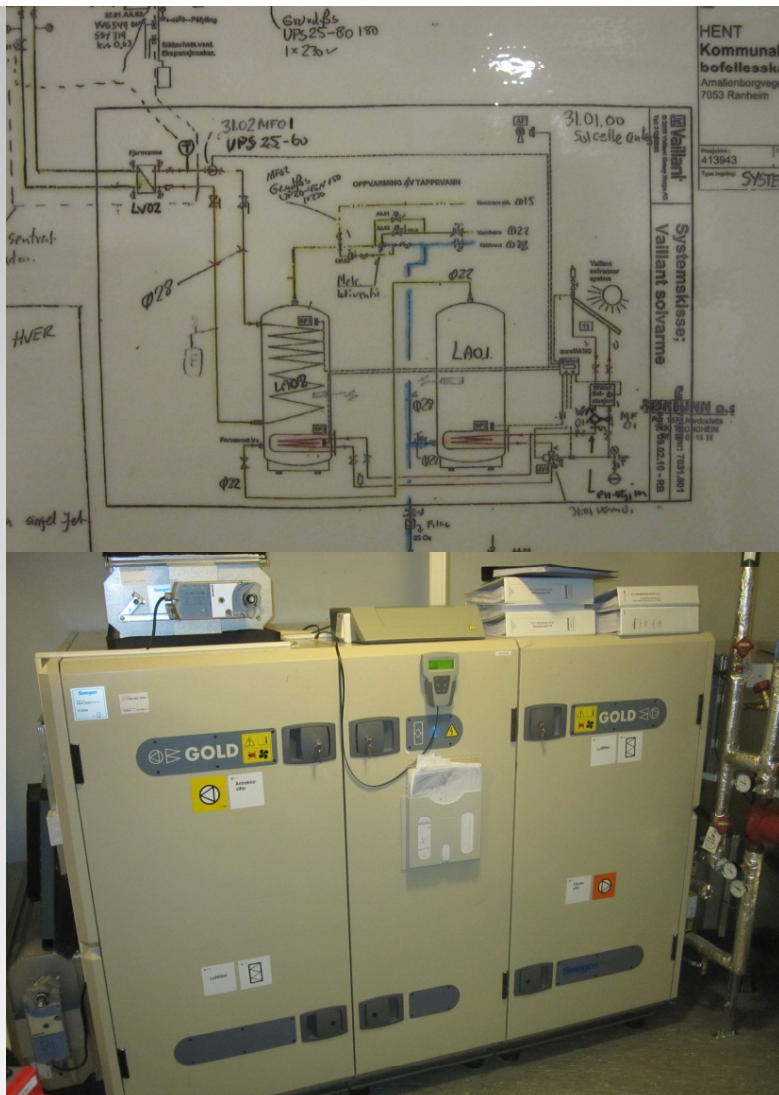
Ranheimveien 149 was completed in 2010 and housing facilities for persons of beds and nursing care. The facility comprises 7 apartments and common areas for residents and staff area. The house is made of two floors. Ranheimsveien 149 meets the requirements to be a passive house. To further reduce energy consumption were selected LED lighting for large parts of the building. The building is also pressure tested and thermo rayed to find and eliminate any air leaks and thermal bridges. The project was a pilot project, both in terms of low energy consumption and in relation to the use of solid wood as a building material. The building is connected to district heating network and has a 15 m² solar collectors installed that provide preheating of tap water.

WHY IT HAS BEEN DONE:

Ranheimsveien 149 is part of the Trondheim Municipality's investment in health care. Trondheim, the project gained experience of building passive houses. It is also the first municipal building with solar collectors.

HOW IT WAS DONE:

Measurements show that the energy consumption for Ranheimsveien 149 is in the 124 kWh/m² per year.



Key figures

U-values (ECO-new build)

W/m ² K	National Regulation (new build)	Concerto Specification	Actual
Facade wall	0.18	0.1	0.09
Roof	0.13	0.1	0.08
Ground Floor	0.15	0.1	0.07
Window	1.2	0.8	0.8
Glazing	1.2	0.8	0.8
Shading			
Doors	1.2	0.8	0.8
Infiltration (n50)	2.5	0.6	0.3

ENERGY

[kWh/m ²]	National Regulation	CONCERTO specification	Actual 2012
Heat	95	54	61.5
space heating	51	15	
ventilation	6	3	
pipe loss	8	6	
DHW	30	30	17.9
Electricity	40	20	62.8
lighting	17	8	
cooling	0	0	
equipment	23	12	
other	0	0	
Total	135	74	124.3

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