



Project information

Project type:	Intelligent metering
Address:	Gråtrostveien 1-33 Gulspurvveien 1-52 Ringdueveien 1-40
End construction year:	2009
Building type:	Apartment buildings
Units:	190 + 19
Floors:	2-4
Persons in building:	-
Gross area BTA:	21 774 m ²
Net heated area:	16 205m ²
Additional cost for eco-application:	n.a.
Total building cost:	n.a.

Special ECO-technologies used:

- Intelligent metering

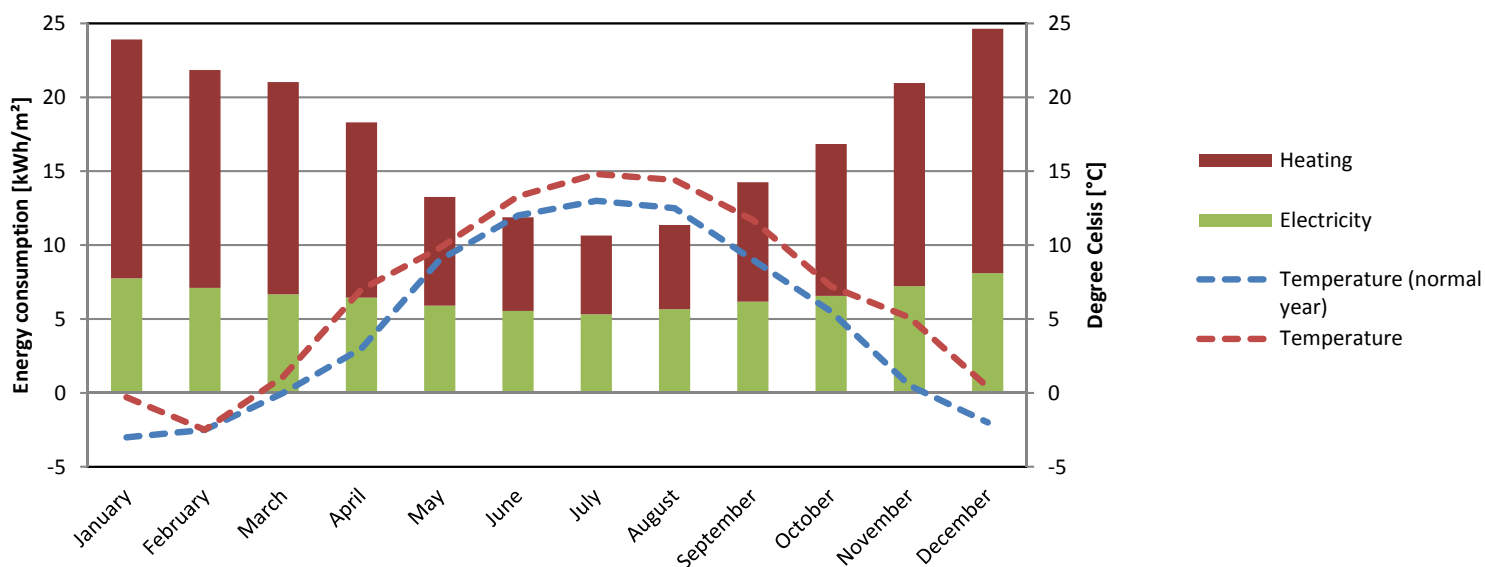
COMMENT:

- The houses have undergone rehabilitation.
- Rehabilitation is not included in the ECO-City project.
- The project includes only the installation of intelligent metering of district heating



Energy consumption

Energy Consumption 2011



ECO-City project partners

WHAT HAS BEEN DONE

Completion of a traditional rehabilitation anno 2003 with 5 cm additional insulation, replacement of windows and doors (U-value of about 1.4) and some measures such as cleaning of ventilation ducts and construction of waste suction system. In addition, it was decided to install individual metering of heating for each apartment and this part of the project is funded through ECO-City. This is done because it is mounted pulse monitors on all radiators that records the consumption of energy by the difference in surface temperature of the radiator and the room is used together with the surface of the radiator. The housing cooperative uses these measurements to bill for actual usage instead of a prorated system where each resident pays for the area-weighted part of the total consumption.

WHY IT HAS BEEN DONE:

The reason for the rehabilitation was adopted in the housing cooperative is that they felt that especially the windows began to be bad, and that wind-proofing / insulation of walls was not good. In the process of designing a rehabilitation came to enter at the point of creating a system that each resident would pay for their actual consumption and not for an area fraction that is an unfair solution. During the project, there was set up goals for what we wanted to achieve with the project, and it was summed up by the structural measures (for insulation, air sealing and new windows / doors) would provide about 30% savings, and the assembly of the individual measurements would give an effect approximately 10%.

HOW IT WAS DONE:

The results so far are pretty good. As in all such projects will experience a gradual improvement as residents must learn to use apartments in a different way, but as of now we notice that the district heating consumption has been reduced about 33% (figures from last winter). Residents of the housing cooperative is generally satisfied with the project even if it was some noise in the startup phase in that they were billed for actual consumption.



Key figures

ENERGY

[kWh/m ²]	Before rehab	Actual 2011
Heat	175	130.4
space heating	84	
ventilation	46	
pipe loss	10	
DHW	35	
Electricity	56	78.5
lighting	25	
cooling	0	
equipment	5	
other	26	
Total	231	208.9

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