



Project information

Project type:	New Eco school building and sports hall
Address:	Statsing. Dahls gate 1 Trondheim
End construction year :	2010
Building type:	Secondary school
Floors:	3
Persons in building:	
Gross area BTA:	7 560 m ² + 2 850 m ²
Net heated area:	6 533 m ² + 2 650 m ²
Window/door area:	851 m ² + 150 m ²
Additional cost for eco-application:	50 €/m ²
Total building cost:	n.a.

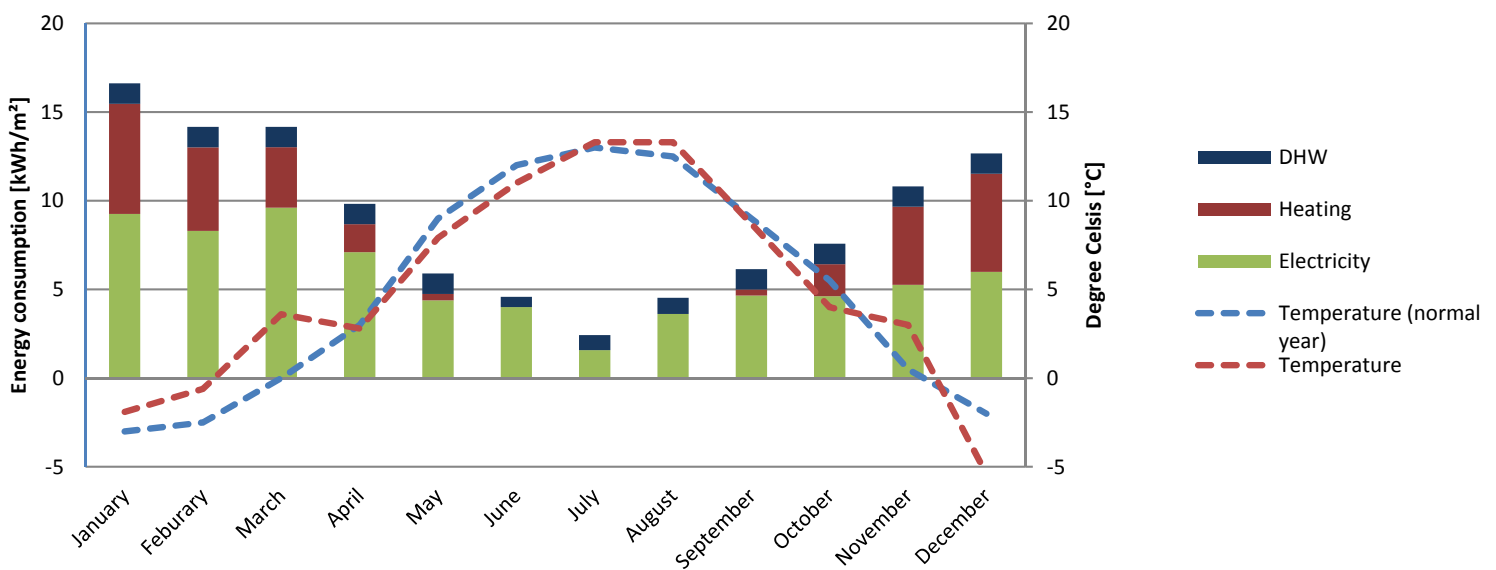
Special ECO-technologies used:

- Masonry / concrete construction
- Extra thick insulation walls and ceiling
- Windows with low U-value
- Extra high density building requirements
- District Heating
- High efficiency heat recovery ventilation



Energy consumption

Energy Consumption 2012



ECO-City project partners

Rosenborg school and sports hall: Low Energy Building

What has been done:

Rosenborg school and sports hall was completed in 2009. Both buildings had energy goals that are significantly better than the current technical regulations. The buildings are very compact, with large volumes relative to the surface. Low energy consumption is also achieved through good insulation, sealing and heat by avoiding cold bridges. It is used low-energy lighting. Ventilation systems are balanced and heat recovery. The buildings are also pressure test the seal and thermo rayed to find and eliminate any air leaks and thermal bridges. The school building and sports hall have water-borne heating based on district heating

Why it has been done:

The original school from 1962 was one of the worst school buildings in the Trondheim. Similarly, the old sports hall in poor condition. The energy consumption of the old school was also sky high with a consumption of about 300 kWh/m² per year.

How it was done:

Measurements show that the energy consumption of the school is the **X kWh/m²** per year. This is about 1/3 of the energy of the old school. The energy consumption for the sports hall is on **X kWh/m²** per year.



Key figures

U-values (ECO-new build)

W/m ² K	National Regulation (new build)	Concerto Specification	Actual
Facade wall	0.22	0.18	0.15
Roof	0.15	0.12	0.12
Ground Floor	0.15	0.12	0.06
Window	2	1.1	1.21
Glazing	2	1.1	1.21
Shading			
Doors	-	-	1.21
Ventilation rate	4	3.7	4

ENERGY

[kWh/m ²]	National Regulation	CONCERTO specification	Actual 2012/13
Heat	125	75	41.0
space heating	54	29	
ventilation	40	27	
pipe loss	18	9	
DHW	13	10	12.7
Electricity	54	43	68.4
lighting	28	22	
cooling	0	0	
equipment	15	12	
other	11	9	
Total	179	118	109.4

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