

Project information

Project type:	Eco-light rehabilitation
Address:	Norra Vallgatan 48
Rehabilitation year:	2008-2009
Building type:	Multi family houses
Dwellings:	111
Stores:	7 + basement + attic
Persons in buildings:	134
Gross area BTA:	15960 m ²
Net area:	4865 m ²
Heated area:	2205 m ²
Window/door area:	406 m ²
Total eligible costs:	65.6 €/m ²
Total costs:	1089 €/m ²



Special ECO-technologies applied:

- Controlled ventilation with heat recovery
- Improved low energy windows
- Internal insulation of façade (box-in-box)
- Insulation of thermal bridges
- Closed class balconies

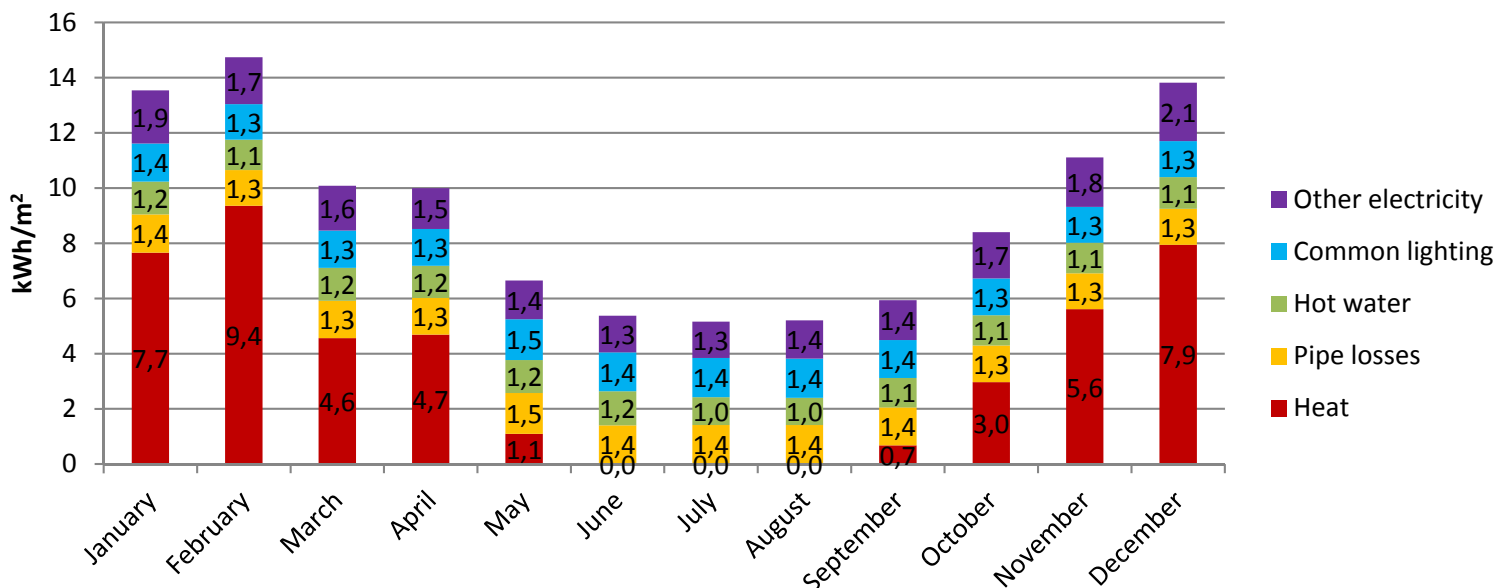
NOTE:

The buildings are rehabilitated in two phases. The second phase begins primo 2010 and the buildings are expected ready for occupation later in the year.



Energy consumption

Energy consumption 2012 - Degree day corrected

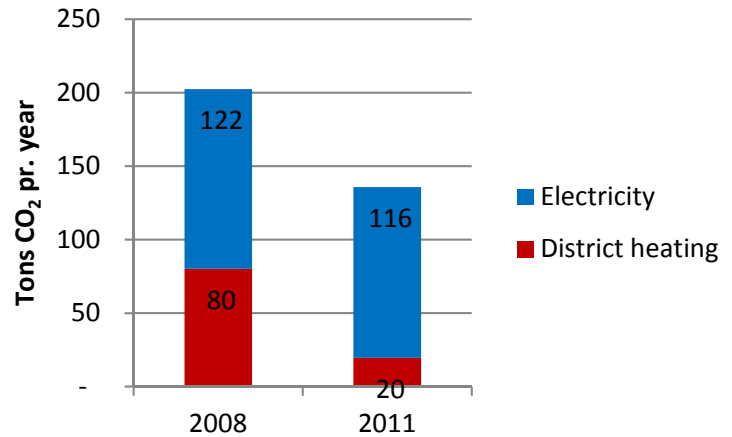


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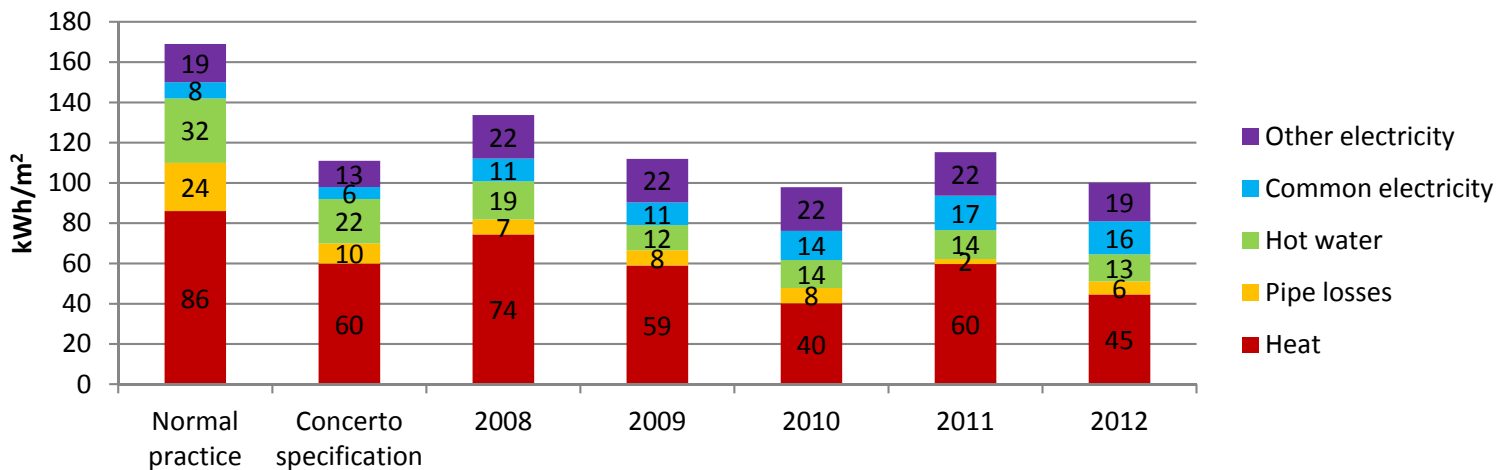
Lessons learned:

- Avoiding cold bridges at window sides, beams and floor partitions' is important for the performance
- The box in box insulation principle has proven to be very efficient
- The ventilation ducts are made as pan flutes in each room, which saves space, avoids horizontal ducting, avoids fire safety valve, and makes balancing easy from the attic.
- Finally all ducts can be covered by granulated insulation material

CO₂ emission



Energy - specifications and consumption



Key figures

Heat trans.	Unit	Before rehab.	Concerto spec.	Actual	Energy consumption	Unit	Normal practice	Concerto spec.	Actual 2008	Actual 2012
Outerwall	W/m ² K	1.14	0.25	0.4	Heat	kWh/m ²	86	60	74	45
Roof	W/m ² K	0.5	0.25	0.2	Pipe losses	kWh/m ²	24	10	7	6
Floor	W/m ² K	0.5	-	0.5	Ventilation	kWh/m ²	28	20	-	-
Windows	W/m ² K	2.8	1.1	1.2	Hot water	kWh/m ²	32	22	19	13
Glazing	W/m ² K	3.0	<1.1	-	Total heat	kWh/m²	170	112	101	65
Doors	W/m ² K	-	-	1.2	Common el.	kWh/m ²	31	22	11	16
Vent. rate	h ⁻¹	-	0.5	0.66	Other el.	kWh/m ²	19	13	22	19
					Total elec.	kWh/m²	50	35	33	36
					Solar heat	kWh/m ²	0	0	0	0
					Total	kWh/m²	220	147	134	100

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