POLITECNICO DI MILANO

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Gruppo di ricerca sull'efficienza negli usi finali dell'energia





Asilo Cologno Monzese - Italy

European GreenBuilding Award - Best New Projects
Frankfurt, 14 April 2010

GreenBuilding Partner

Municipality of COLOGNO MONZESE

Città di
Cologno Monzese

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ROCKWOOL Italia

ROCKWOOL
FIRESAFE INSULATION

ASILO – Cologno Monzese

Description of the building

The building have function of kindergarten for about sixty children and civic centre for social and cultural activities for families. The school and social structure was ordered and will be managed by the Municipality, in the suburb of Milan area, in north of Italy. The main volume of the intervention is a new building, whose architectural shape is quite unconventional and very attractive, with curved roof surfaces. The aim of the architects is to create a building with functional internal and external spaces (classrooms, multifunctional spaces, gardens, etc.) and an interesting aspect for children and family of the community.

Design Team

Architectural Designers
Arch. **LORENZO IACHELINI**
Arch. **GUIDO PALEARI**

Systems Designer
Eng. **CLAUDIO ZUCAL**

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Energy indices (respect legal values)	**Saving in total primary energy (without renewables): 55 %** **Saving in total primary energy (including renewables): 77 %**
Energy savings and basis of calculation	**Primary energy for heating is 81% lower than Italian building code** **Primary energy for cooling is 21 % lower than typical cooling configuration in Italy (there was no legal values for cooling in Italy).**
Building envelope	**High thermal insulation level** **External walls – 20 cm insulation, 0.16 W/m²K (average value); Roof – 0.15 W/m²K; Basement – 0.2 W/m²K; high performance windows – 1.13 W/m²K** **Optimisation of the building envelope (insulation, windows, cold bridges)**
Building services - HVAC	**Ground water heat pump for heating and sanitary hot water** **Free cooling with ground water heat exchanger** **Mechanical ventilation with heat recovery** **Night time ventilation cooling in summer**

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Renewable energy	photovoltaic panels (110 m²) grid connected 3,9 kWh/m³a (primary energy equivalent)
Other measures	Natural ventilation through skylight Use of daylight and energy efficient lighting (i.e. skylight) Solar protection by building shape, orientation and trees
Replication and innovation	sophisticated systems and occupant driven controls are not present, but the energy concept is based on a climate-designed envelope and on very efficient plant equipments which are no more experimental and they are becoming economically available. It is a good model to follow to reach the A+ Class in Italy.

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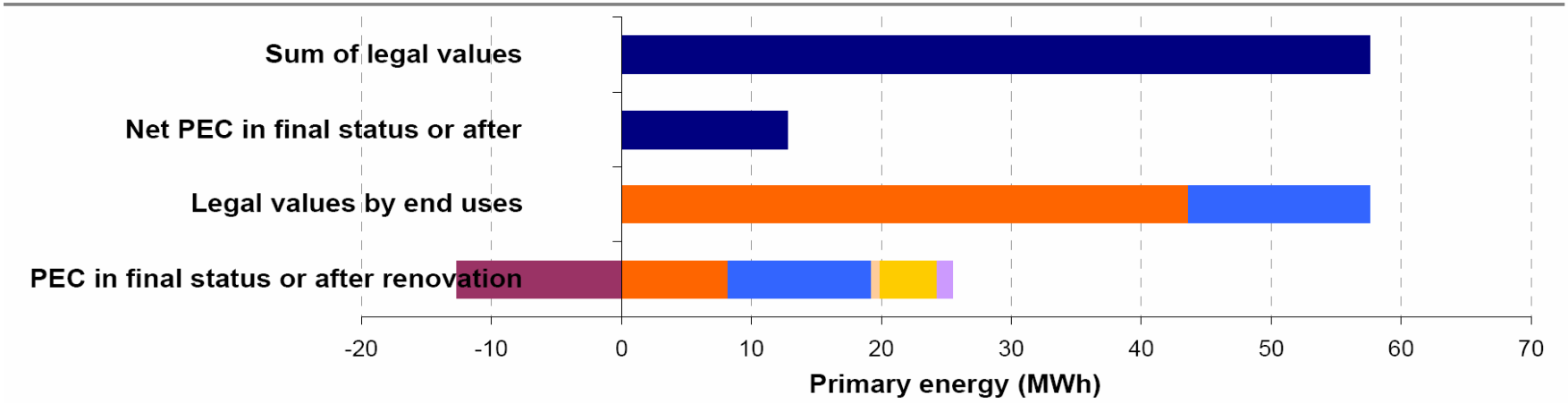
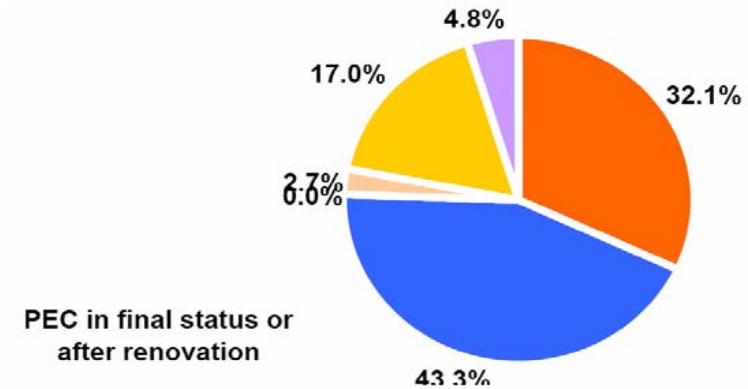
Energy saving percentage including renewables[4]	(%)	77.8%
Energy saving percentage without renewables[4]	(%)	55.8%



- PEC for heating
- PEC for lighting
- PEG from wind generation system
- PEC for cooling & dehumidification
- PEC for other electric uses
- PEG from hydroelectric generator
- PEC for ventilation & humidification
- PEG from solar thermal plant
- Total Primary Energy
- PEC for SHW production
- PEG from photovoltaic plant



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THANK YOU!

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Frankfurt, 14 April 2010