



after refurbishment



before refurbishment



GENERAL INFORMATION	The building is located in the town Pruszcz Gdański near Gdańsk city.
Building owner	ownership community
Address	Pruszcz Gdańsk, Raciborskiego Str. 3
Number of dwellings	18 before refurbishment 18 after refurbishment
Number of floors	3
Average size of the dwellings	42.7 m ² before refurbishment 42.7 m ² after refurbishment
Total heated dwelling floor area	768.7 m ² before refurbishment 768.7 m ² after refurbishment
Year of construction	1971
Year of refurbishment	2003
Has the refurbishment been carried out while the dwelling was occupied?	Yes
Has an independent quality assurance been carried out?	No
Current total building costs	24,500 €/a (water, waste water, waste, electricity, heat, administration, refurbishment fund)
Current building costs concerning energy recovery	11,500 €/a



INITIAL SITUATION/LOCAL CONDITION	<ul style="list-style-type: none"> the outer gable walls are 38 cm thick, made of prefabricated hollow concrete units with insulation (U-value = 0.89 W/(m²K)) the outer longitudinal walls are 24 cm thick, made of gas concrete bricks (U-value = 1.15 W/(m²K)) the floors are made of prefabricated hollow concrete slabs (no girders), insulated with 3 cm of mineral wool (U-value = 0.87 W/(m²K)) the flat roof is insulated with 8 cm of mineral wool and additional 10 cm of foamed polystyrene (U-value = 0.24 W/(m²K)) windows have double wooden frames (U-value = 2.6 W/(m²K)), most of them have been replaced by tenants with windows which have a single vinyl frame and double-pane glazing (U-value about 1.5 W/(m²K))
TYPE OF REFURBISHMENT (MEASURES WHICH HAVE BEEN CARRIED OUT)	<ul style="list-style-type: none"> insulation of building envelope improvement of heating system
WHY HAVE THE MENTIONED MEASURES BEEN CARRIED OUT?	The measures mentioned above have been selected on basis of the energy audit which was performed according to the Thermo-modernisation Law. In compliance with this Law, the most important criterion was to obtain energy savings of more than 25 % in heating and hot water consumption.

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PLANS	Not available at present.
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ENERGY RELATED ACTIVITIES			
Exterior components	<ul style="list-style-type: none"> insulation of outer walls with 13 cm of foamed polystyrene 		
Systems engineering	<ul style="list-style-type: none"> installation of missing thermostatic valves on radiators replacement of central venting system with vent valves on risers rinsing of heating installation hydraulic balancing of heating installation 		
ENERGY RELATED INDICATORS			
	Initial situation	After refurbishment	Reduction
Energy performance	202.36 kWh/m ² a (only heating)	155.38 kWh/m ² a (only heating)	23.2 %
Energy consumption	155,556 kWh/a (only heating)	119,444 kWh/a (only heating)	23.2 %
CO ₂ -emission	49.85 kg/m ² a (only heating)	38.28 kg/m ² a (only heating)	11.6 kg/m ² a
Heating system	Central heating with local DH substation	Central heating with local DH substation	
DHW-system	Decentralised DHW preparation system based on electric heaters	Decentralised DHW preparation system based on electric heaters	
Monitoring system	Heat meter in DH substation measures heat consumption for heating every month	Heat meter in DH substation measures heat consumption for heating every month	
Current regional energy costs	12.80 €/GJ (0.0461 €/kWh) + 31,224.88 €/MW/a (district heating)		

SUBSIDIES	Financing: 20 % own funds, 80 % loan. 25 % subsidy from the capital for the loan taken by the investor. Subsidy institution: Thermomodernisation Fund.
STATEMENT	
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