



after refurbishment

GENERAL INFORMATION	
Building owner	Dublin City Council
Address	Queen Street, Dublin 7
Number of dwellings	70 before and after refurbishment
Number of floors	4-Jan
Average size of the dwellings	57.63 m ² before refurbishment
	62.84 m ² after refurbishment
Total heated floor area	4030.1 m ² before refurbishment
	4398.8 m ² after refurbishment
Year of construction	1970
Year of refurbishment	2002
Has the refurbishment been carried out while the dwelling was occupied?	no
Has an independent quality assurance been carried out?	no
Total building costs	105.000 €
Building costs concerning energy recovery	19.394 €

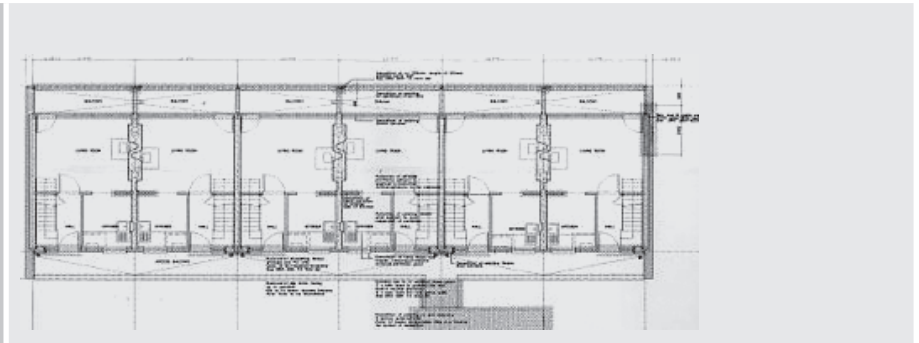
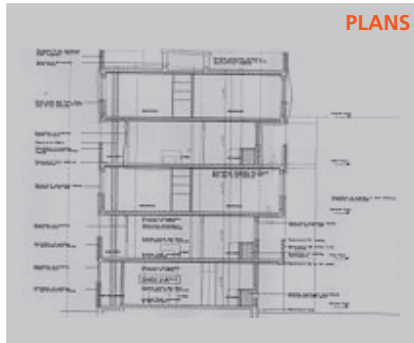


INITIAL SITUATION/LOCAL CONDITION	The flats are over forty years old and as such are in poor repair. Areas of particular importance are windows, roofs and concrete works.
TYPE OF REFURBISHMENT (MEASURES WHICH HAVE BEEN CARRIED OUT)	<ul style="list-style-type: none"> • Enclosed balconies • Improved heat conductivity in building fabrics • Improved heat conductivity of glazed areas • Gas fired central heating system with high efficient boilers
WHY HAVE THE MENTIONED MEASURES BEEN CARRIED OUT?	To reduce heat loss through building fabrics and increase the internal area of the units, to help alleviate fuel poverty, preservation of housing stock

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ENERGY RELATED ACTIVITIES			
Exterior components	<ul style="list-style-type: none"> • Double glazed air filled aluminium windows U-value 3. • Passive solar alignment. Enclosed and glazed balcony areas. • Improved insulation for walls (0.41 - 0.53 W/m²K) and roofs (0.30W/m²K) 		
Systems engineering	<ul style="list-style-type: none"> • 75 % efficiency single unit Gas boilers • Individual smart card payment system 		
ENERGY RELATED INDICATORS			
	Initial situation	After refurbishment	Reduction
Energy performance	1,042.6 kWh/m ² /yr	201 kWh/m ² /yr	81 %
Energy consumption	4,586,397 kWh/a	884,199kWh/a	79 %
CO ₂ -emission	365.9 kg/m ² /yr	38.8 kg/m ² /yr	327.1kg/m ² a
Heating system	Open solid fuel fire	75 % efficiency gas fired boiler	
DHW-system	None	None	
Monitoring system	No monitoring; Monthly Gas meter readings. Temperature and humidity loggers.		
Regional energy costs	57.771 €		

PROMOTION	
SUBSIDIES	SEI House of Tomorrow scheme € 5,000 per unit for 42 units
STATEMENT	<p>Kieran Gallagher, Deputy City Architect, Dublin City Council</p> <p>The overall objective of Dublin City Councils refurbishment programme was to demonstrate a high standard of energy-efficiency in refurbished social housing apartments within an overall integrated area plan for social, economic & environmental regeneration of the inner city. Energy Refurbishment was considered in terms of reduction of greenhouse gases, combating full poverty and preservation of housing stock. Codema secured a grant of € 500,000 for the energy efficient refurbishment of 100 Dublin City social housing flats in 2003, which facilitated higher specifications for fabric insulation, high performing windows and the installation of an efficient heating system</p>
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