



L'isle d'Abeau (France)

**61% energy saving.
Reduction of running cost in social housing through energy and water savings.**

Project data

Location, address:	La Dentellière, 12 rue Hôtel de Ville, F-38080 L'Isle d'Abeau	
Region:	Lyon surrounding, Rhône Alpes	
Surroundings:	Suburban area	
Climate:	Low mountain	
Heating degree days:	2362	
Year of construction and renovation:	1984 / 2003	
Typology:	Apartment building.	
No of dwellings:	110 flats	
Total floor area:	5400 m ²	
Owner:	OPAC 38 (social housing company)	
Architect and Builder:	DUO Architects, Ms. Giacometti	
Costs of energy saving measures:	1.37 million €	
Renovation financed by:	State	355 000 €
	Europe	194 000€
	Région Rhône-Alpes	142 000€
	ADEME	91 000€
	Department Isère	26 000€
	GDF	17 000€
	The rest is financed by own funds	

Objectives and Results

Apartments had high running costs, so the retrofit programme was elaborated in order to increase the level of comfort and decrease expenses on water and energy, which is an important beneficial side effect in social housing. In these buildings there were a lot of turnover and a high vacancy rate because of the high level of maintenance costs for heat (electric heating) and for domestic hot water. The retrofit programme stands out as a total environmental approach, which aims to lower the energy consumption by some 40% through enhanced heating systems and education of end users. The total maintenance costs were aimed to be decreased by 35%.

Renovation concept

Key renovation features

- Natural gas heating + thermal solar panels instead of electric system
- Photovoltaic modules for ventilation and common lightning



State-of-the-art	
Before renovation	After renovation
<i>Constructions [U-values: W/m²K]</i>	<i>Constructions [U-values: W/m²K]</i>
<i>Installations</i>	<i>Installations</i>
<ul style="list-style-type: none"> Private electric heating system 	<ul style="list-style-type: none"> High energy efficient gas boiler 165m² Solar thermal panels for domestic hot water and PV operated pumps 50m² Photovoltaic cells for ventilation and low energy lightning in common areas Energy Management System

Energy saving and monitoring

<i>Energy consumption before renovation:</i>	
KWh/m ² :	NA
<i>Energy consumption after renovation:</i>	
KWh/m ² :	NA
Percentage saving ¹ :	61% (energy + maintenance)
13.5% less gas consumption compared to OPAC 38's other buildings.	
25% lower consumption for domestic hot water compared to OPAC 38's other buildings.	
98 000€ / year = 620 € /flat /year saved	



Additional information

- The combination of both environmental and social benefits from the project is of particular interest, as many housing projects tend to focus merely on improvement of comfort and less on societal impact. It is aimed to demonstrate the possibilities to reduce maintenance costs in social housing with renewable energies, energy saving and water saving and to improve the situation of inhabitants.
- OPAC 38 has a social mission: to provide accommodation for people with low incomes. That is why, one of its goals, is to reduce the couple "rent + maintenance charges". This project also aims to demonstrate the benefits of renewable energies and energy management regarding the maintenance costs reduction.
- Communication with end users about possibilities of energy saving is highlighted as crucial to the success of the project, since user behaviour has high impact on energy consumption.

Lessons learned and conclusions

The buildings were erected in the seventies and eighties, and can thus represent a good example to many other European cities with similar buildings together with social and ecological problems. Although there were some problems when the installation was started up, it is now running efficiently. The acceptance by the tenants is obtained. They feel an improvement of their comfort, especially for heating, and they are very satisfied with the reduction in maintenance costs. The overheating due to the former glass roof is also often mentioned. The inside hall is now a comfortable place for the tenants to meet.

References

http://www.europeangreencities.com/demoprojects/france_grenobleL'isle/france_grenobleL'isle.as