

AGENDA XXI

UN DEVELOPEMENT DURABLE



SENGAGER VERS



Opac38,
a social housing
company ...
And sustainable
development

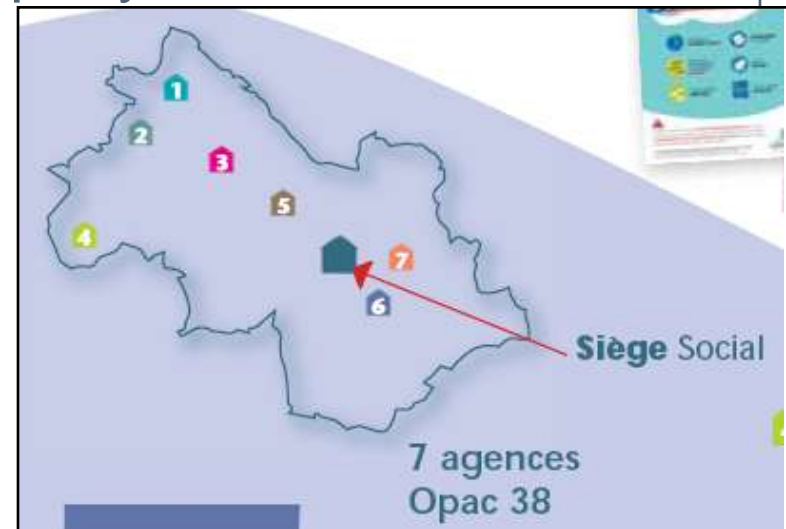


Social housing and sustainable development

Some figures about housing

- 22 millions social housings in Europe
- 30 millions housings in France
- 4 millions social housings in France
- 400 000 in Région Rhône Alpes
- Opac38 : a social housing company in Isère

- 23 000 dwellings
- 300 new dwellings / year
- 500 retrofitted dwellings / year
- 1 head-office in Grenoble
- 7 agencies for local management
- 2 combined management tool : an Agenda21 and ISO9001



Weakest people will be affected first by :

- The growing shortage and cost increasing of energies
=> strong impact on charges
- The damage caused to the environment
=> strong impact on health

We are actually housing these weak people:

**Social housing has to consider
sustainable development**

1. High energy efficiency
2. Renewable energies.
3. Stakeholders' taking over
 - Designing and building stakeholders
 - Maintaining stakeholders
 - Living stakeholders

The 3rd point is usually difficult to implement, yet it is the most important.

There is unfortunately a breaking-off in the chain design-construction-maintenance-living.

OPAC38 energy and environment strategy

Realisations by the end of 2008



Patrimoine existant

Sites	Groupe	CG	Logts	Thermique m ²	PV m ²	Bois énergie Nb lgts	Bois énergie Nb lgts en CU	nb logts Efficacité énergétique
Autrans	Les Franques	348	55			55		
Beaurepaire	Charles de Gaulle	187	31	44				
Bourg d'Oisans	Pré des Roches	231	67			67		
Bourgoin	L'Oiselet	10	90	128				
Charvieu-Chavagneux	Maisons Neuves	3 649	78			78		
Chasse/R	L'Hélios	258	42	100				
Domène	Emile Blanc	116	126			126		
Echirrolles	Surieux	173	505	705	100			
Gillonay	La Pointière	147	24			24		
Isle d'Abeau	La Dentellière	489	110	165	50			
St Hilaire du T.	Gd Pré Lacour	211	110			109		
St Marcellin	Jean Rosny	352	50				50	
St Marcellin	Beau Soleil	169	96				96	
St Martin d'Hères	Henri Wallon	214 228	354	450				354
St Pierre d'Entremont	Le Presbytère	37	5				5	
St Quentin s/ Isère	Le Bourg	102	24				24	
Tullins	La Contamine	141	100			100		
Villard de L.	L'Essarton	186	78			78		

Totaux Patrimoine existant	1 945	1 592	150	637	175	354
Nb sites	18	6	2	8	4	1

Realisations by the end of 2008



Programmes neufs

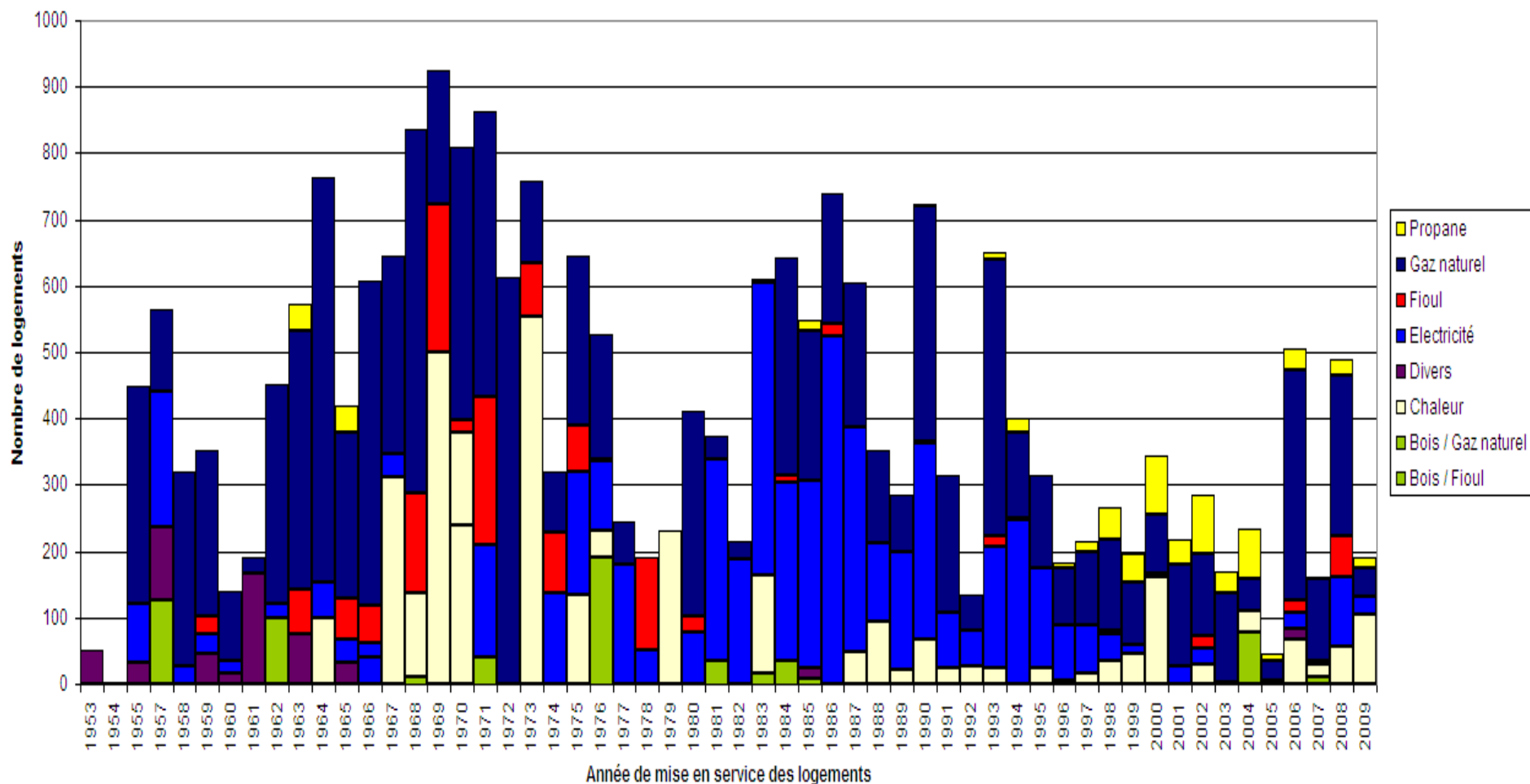
Sites	Groupe	CG	Logts	Thermique m ²	PV m ²	Bois énergie Nb lgts	Bois énergie Nb lgts en CU	nb logts Efficacité énergétique
Bourgoin	Grand Tissage	1 273	60	60	20			60
Bourgoin	Quai de la Bourbe	550	38	53	50			38
Champ Près Frogès	La Cure	5 820	2	10				
Domène	Emile Blanc	4 729	12			12		
Echirolles	Le Kédros	5 801	43	65	122			43
Grenoble	Eloa	3 604	26	40	20			26
Meylan	Les Sources	6 026	6	10				6
Serpaize	Tournesol	3 642	20	30	25			
St Hilaire la C	Le Guillot	1 232	10	25	11			10
St Marcellin	La Santé	134	32	48				
St Martin d'Hères	Les Lavandières	5 810	31	49				
St Pierre d'Allevard	Foyer Autiste		33	50				
Voreppe	Ex-Gendarmerie	6 034	12	20				
Totaux Programmes neufs			325	460	248	12	-	183
Nb sites			13	12	6	1	-	6
Totaux			2 270	2 052	398	649	175	537
Nb sites			31	18	8	9	4	7

Patrimoine de l'Opac38

23 000

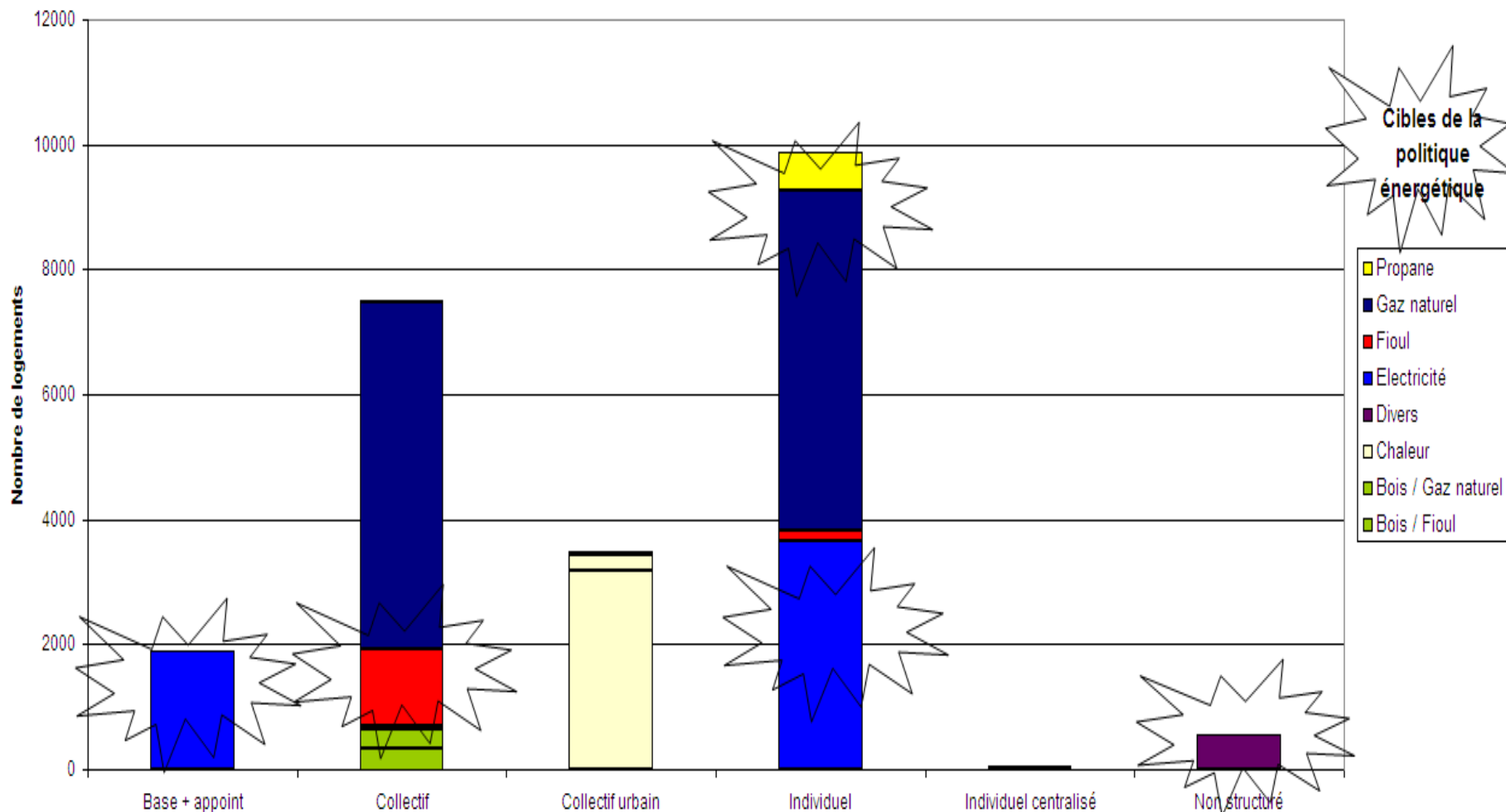
Age du patrimoine et énergie

Attention : pour les acquisitions de patrimoine, est considérée l'année d'acquisition



Energy policy target

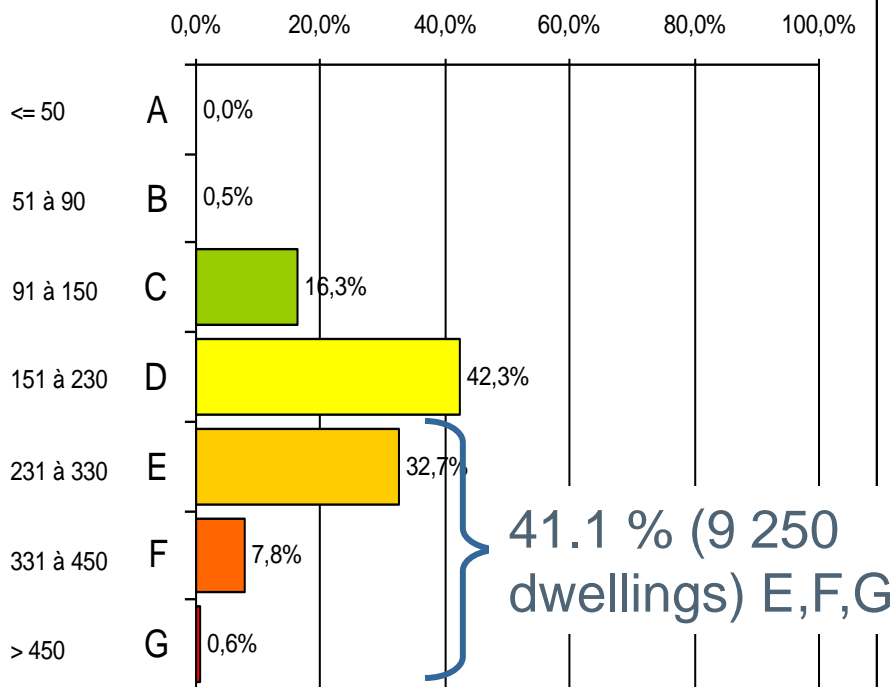
Energies et types de chauffage



Energy and CO2 profile of OPAC38's property



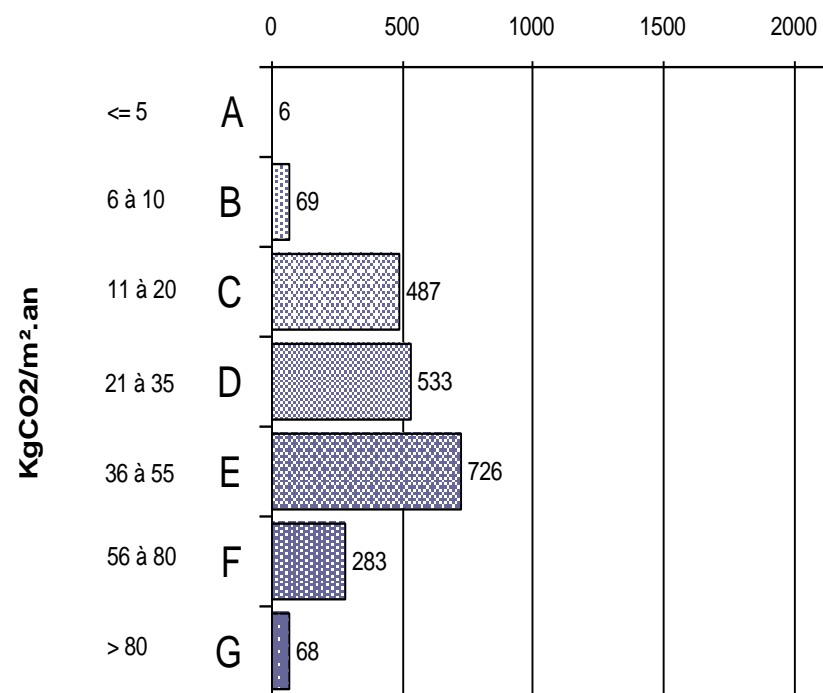
Répartition par classement de la quantité d'énergie primaire



Energy (kWh ep/m²/year)

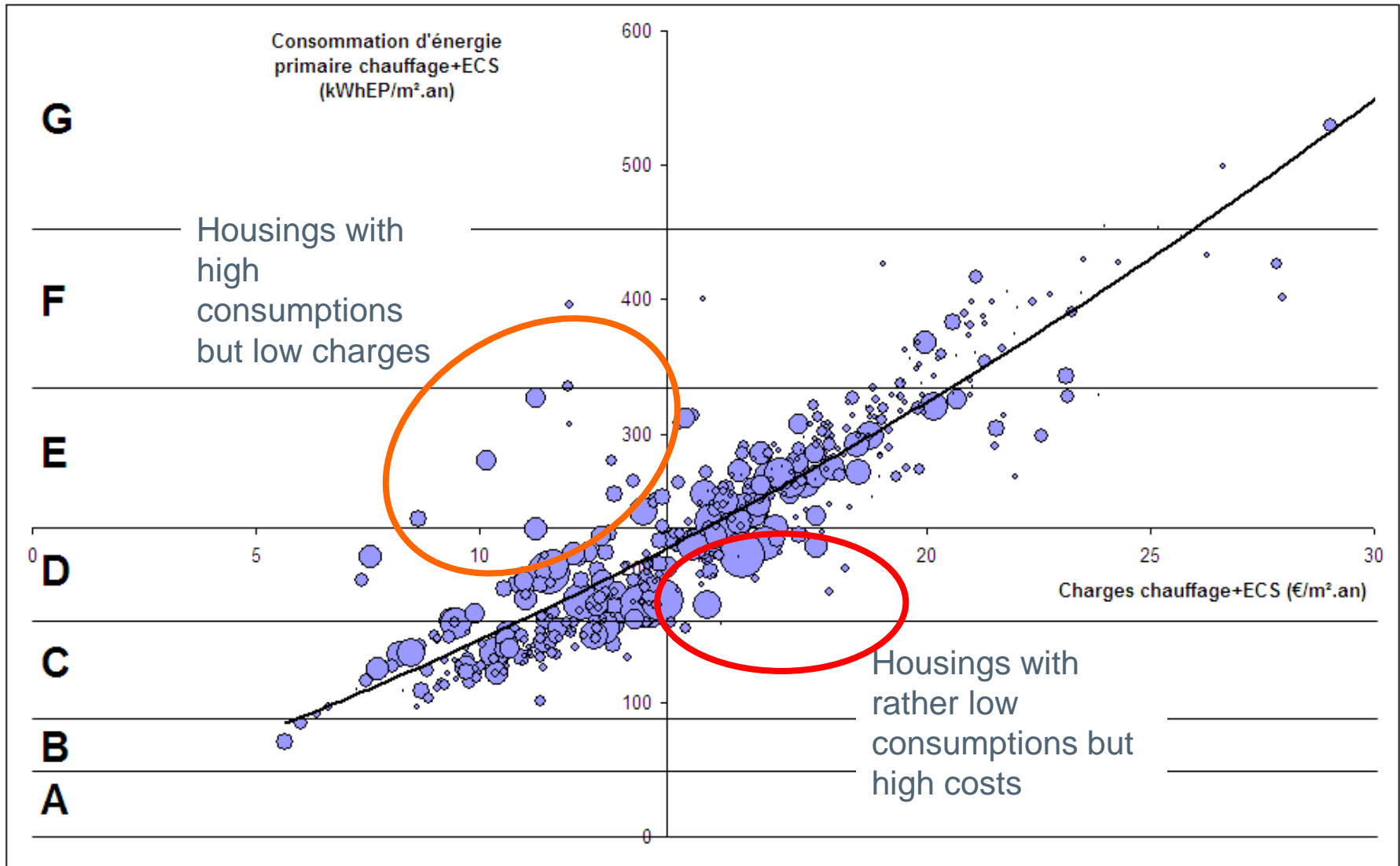
Répartition par classement de la quantité de gaz à effet de serre

nombre de logements diagnostiqués



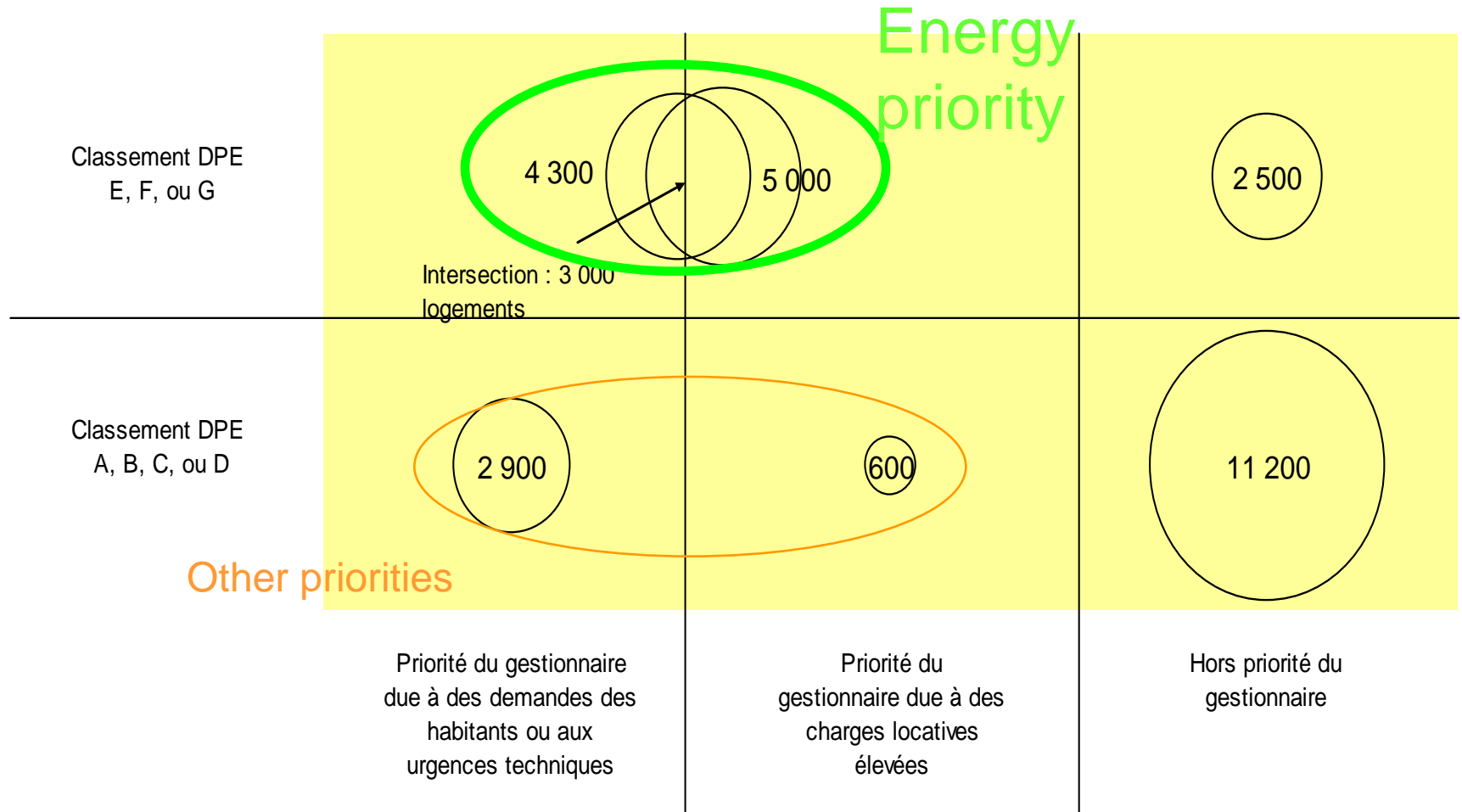
CO2 (kg eq/m²/year)

Energy consumptions and costs

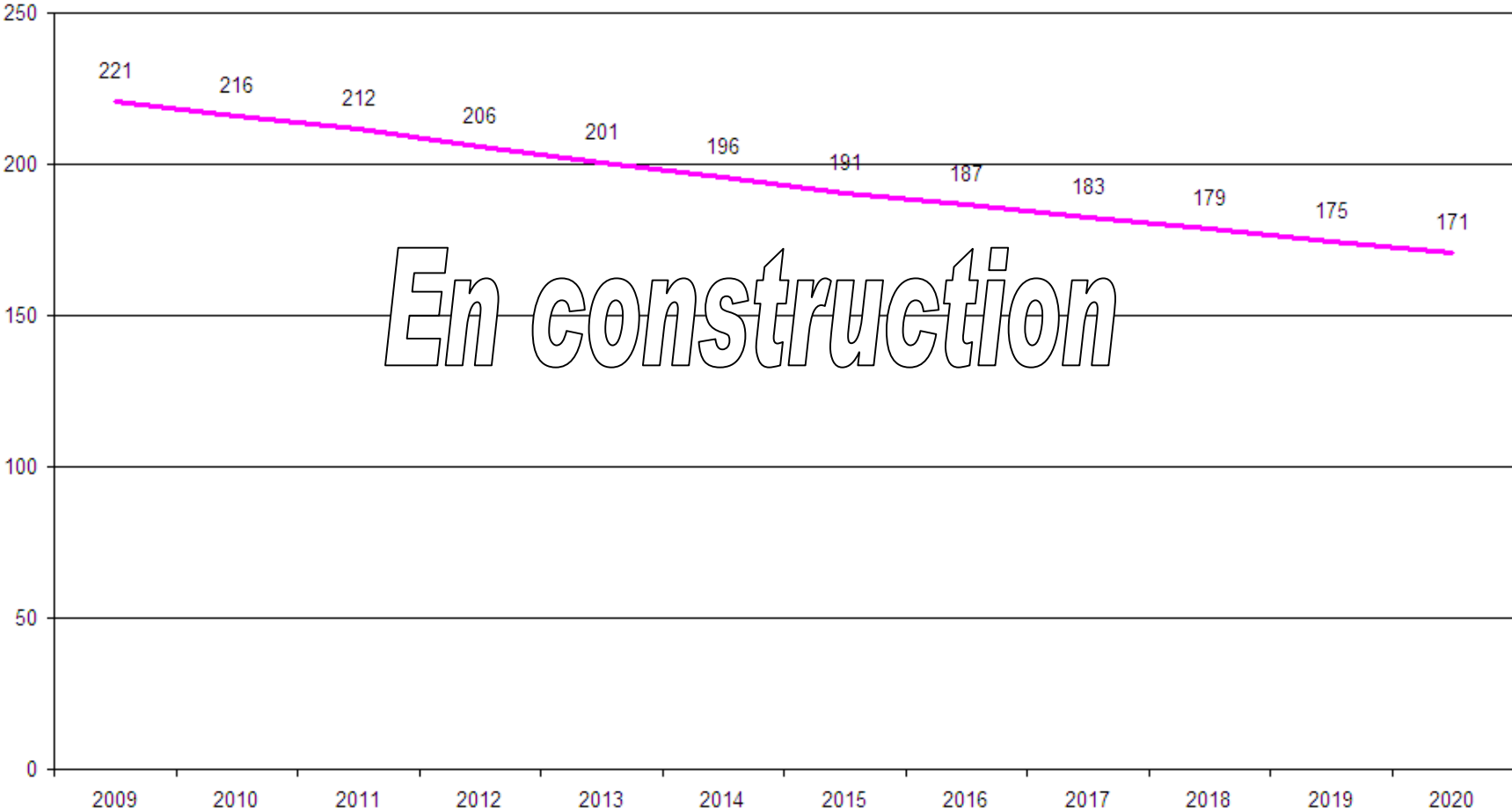


10 600 dwellings have costs over the average (14,3 €/m².an)

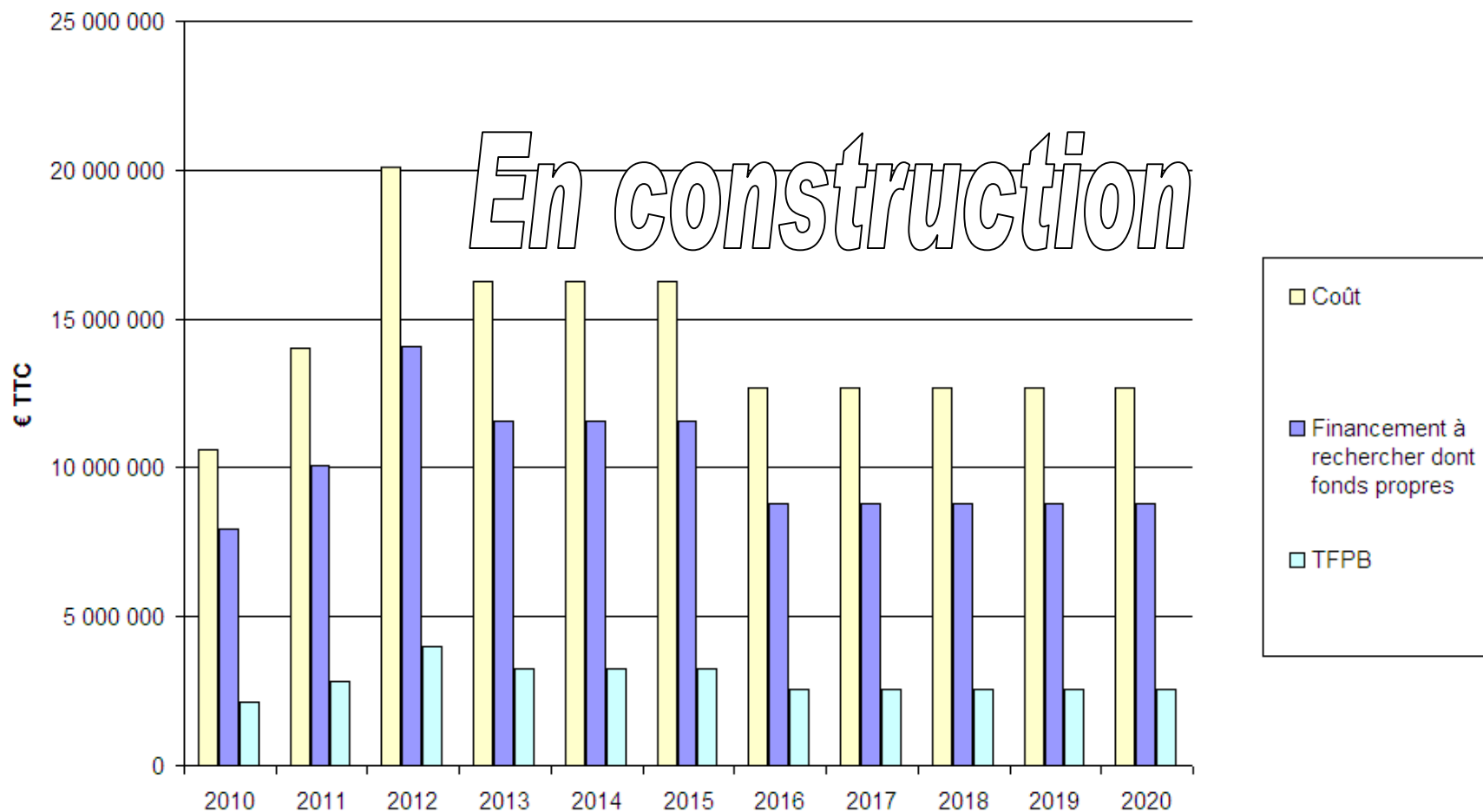
Segmentation du patrimoine (Nombre de logements)



Niveau moyen Energie Primaire (kWhEP/m² an)



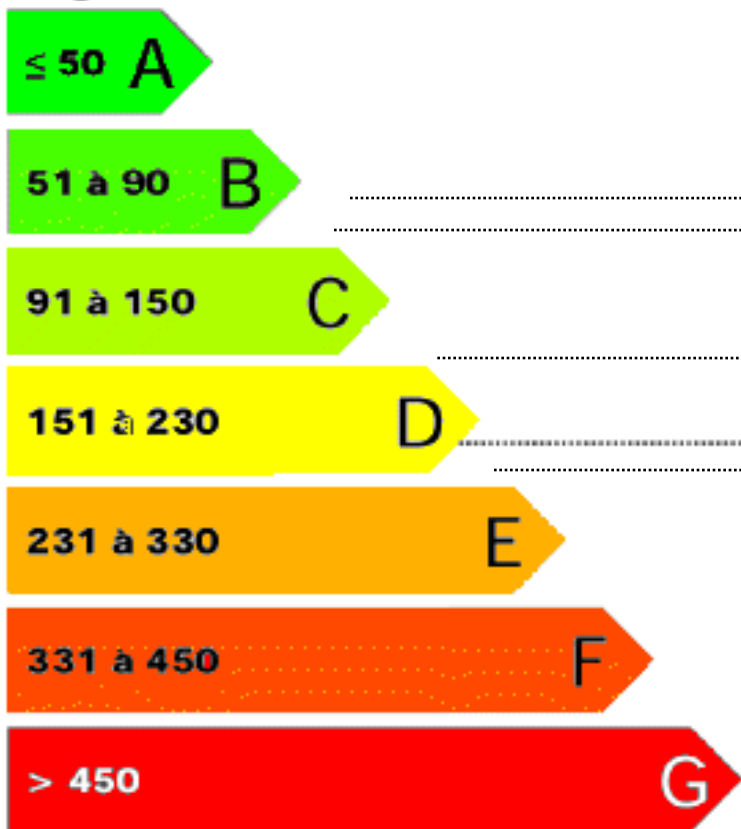
Dépenses et financement



Financing opportunities

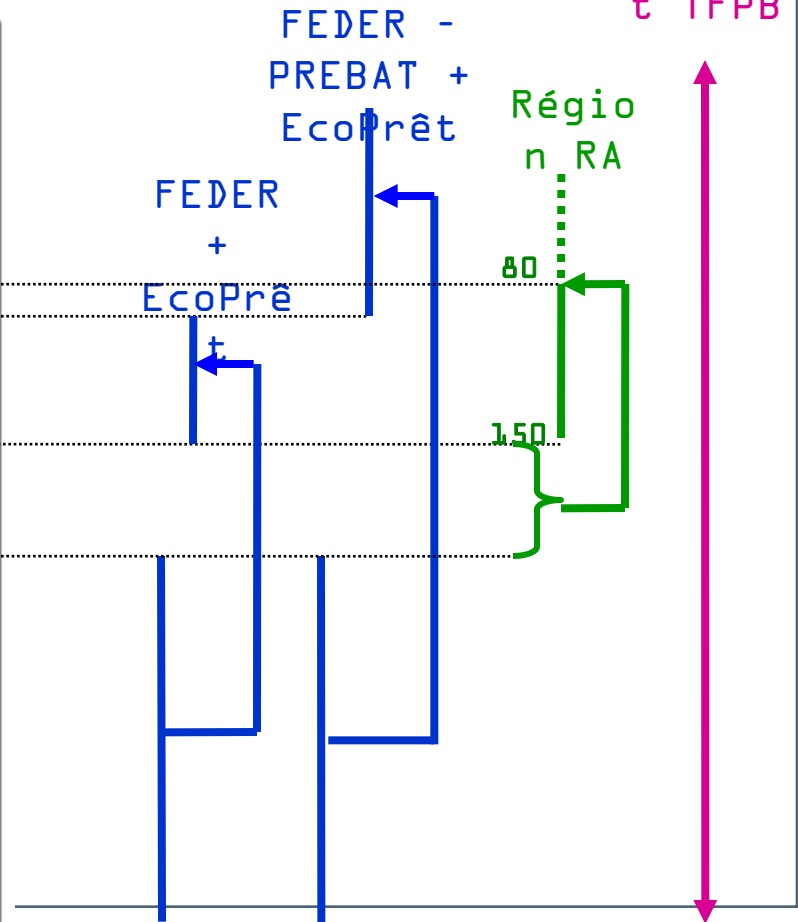
Dégrèvement
t TFPB

Logement économe



Logement

XXX
kWh_{EP}/m².an



Retrofitting of 354 buildings in Saint Martin d'Hères

European contract NNE5-1999-00018

2004



Goals of the retrofitting program



- To give these 1960s buildings a second life in a completely renewal of the neighbourhood
- To reduce the charges of the fuel or electric heating
- To reduce the environmental impact of the buildings

- Needs reduction:
 - 8 cm outdoor insulation
 - Windows replacing (double-glazed)
 - Creation of conservatories replacing the balconies
- Energy change:
 - Connection to the district heating
 - 450 m² of solar panels for both DHW and heating needs
- Others:
 - Improvement of the natural ventilation
 - Repairing of the electric system
 - Renewal of the entrances
 - Repairing of the bathrooms

Total costs (24 000 €/dwellings): 8,6 M€

Of which for the energy works: 5 M€

Grants 3,1 M€ from:

- The state: 1,1 M€
- The EU: 0,5 M€
- Local authorities 1,5 M€

OPAC38 own funds: 0,67 M€

Loan: 4,83 M€

Which leads to a 22% rent increase.

St Martin d'Hères – Henri Wallon 2004



St Martin d'Hères – Henri Wallon 2004

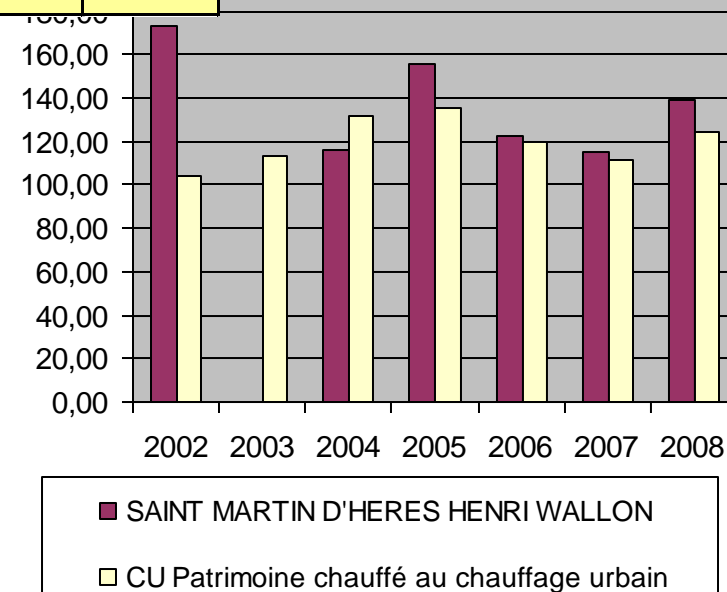


Consumptions results

Bilan annuel 2008

	Site ou patrimoine à étudier		Site ou patrimoine à comparer			
	214		9001 - Chauffage urbain			
	SAINT MARTIN D'HERES		CU			
	HENRI WALLON		Patrimoine chauffé au chauffage urbain			
Nombre de logements	313		3 413			
Surface habitable	21 549		231 424			
Energie chauffage	CU		CU		Ecart (%)	
	Chauffage	Eau Chaude	Chauffage	Eau Chaude	Chauffage	Eau Chaude
Consommation (MWh ou m3)	0,00	10 087,00	28 860,56	127 938,19		
Dépenses de combustible (€/an)	151 174	57 118	2 123 784	742 667		
Dépenses de maintenance (€/an)	10 485	4 495	125 635	58 151		
Total	161 659	61 613	2 249 420	800 818		
Coût du chauffage (€/m²/an)	7,50	/	9,72	/	-23%	
Coût eau chaude (€/m3)	/	6,11	/	6,26		-2%
Coût pour un logement moyen (67 m², 40 m3 d'eau chaude par an) (€/an)	525	257	680	263	-155	-6

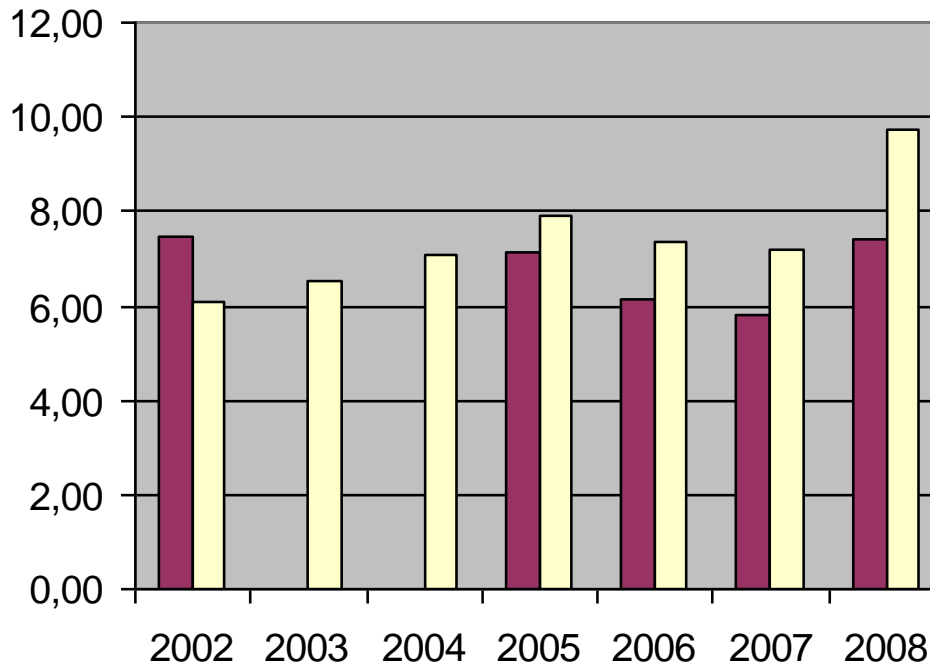
33 - KWh/m² chauffage



Costs results

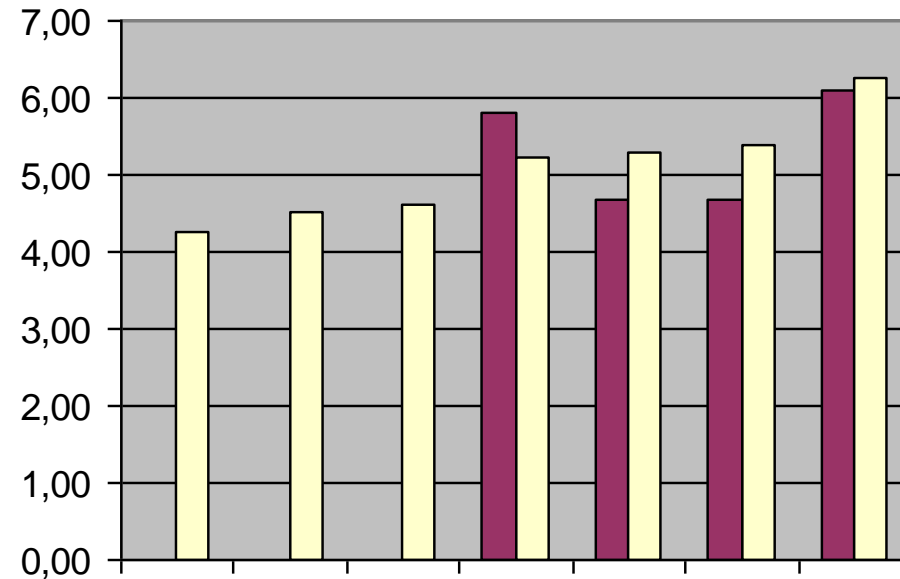


27 - Coût du chauffage (€ TTC/m²)



- SAINT MARTIN D'HERES HENRI WALLON
- CU Patrimoine chauffé au chauffage urbain

31 - Coût ECS (€ TTC/m³)

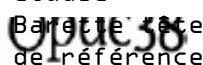


- SAINT MARTIN D'HERES HENRI WALLON
- CU Patrimoine chauffé au chauffage urbain

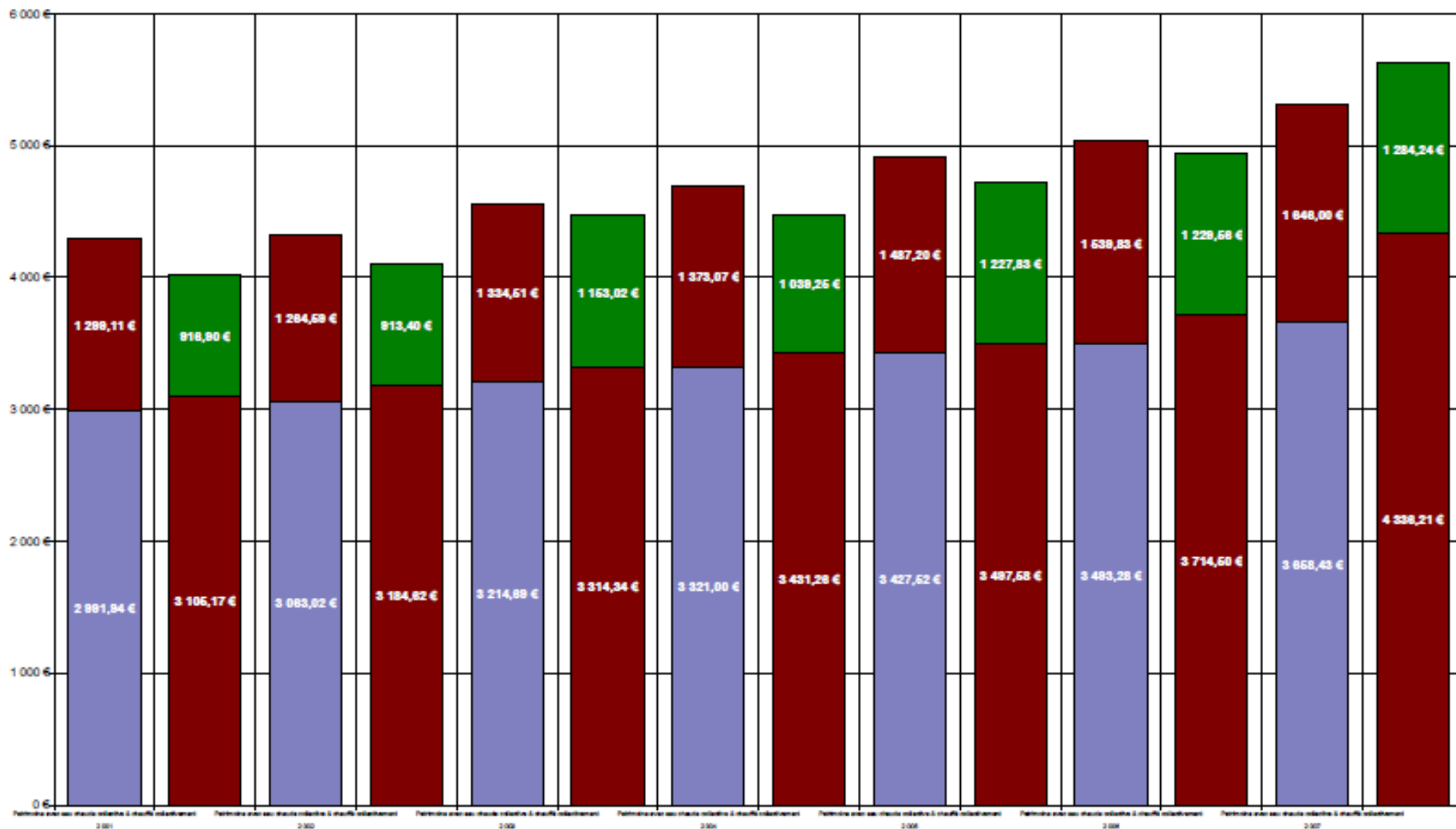
Rent+charges couple

Barette tête verte : le groupe de logement étudié

Barette tête brune : le patrimoine comparatif de référence



Analyse au logement de 67 m2



Before, during and after works...

After works:

1. Creation of a running committee with the inhabitants, the maintenance companies and OPAC38 to:
 - Solve the technical problems
 - Make everyone aware of the targets and specificities of the works
 - Edit a guideline leaflet addressed to the inhabitants and maintainers

2. Training of OPAC38's field staff

Retrofitting of 25 dwellings in Bourgoin-Jallieu 2009



REGION
Rhône-Alpes

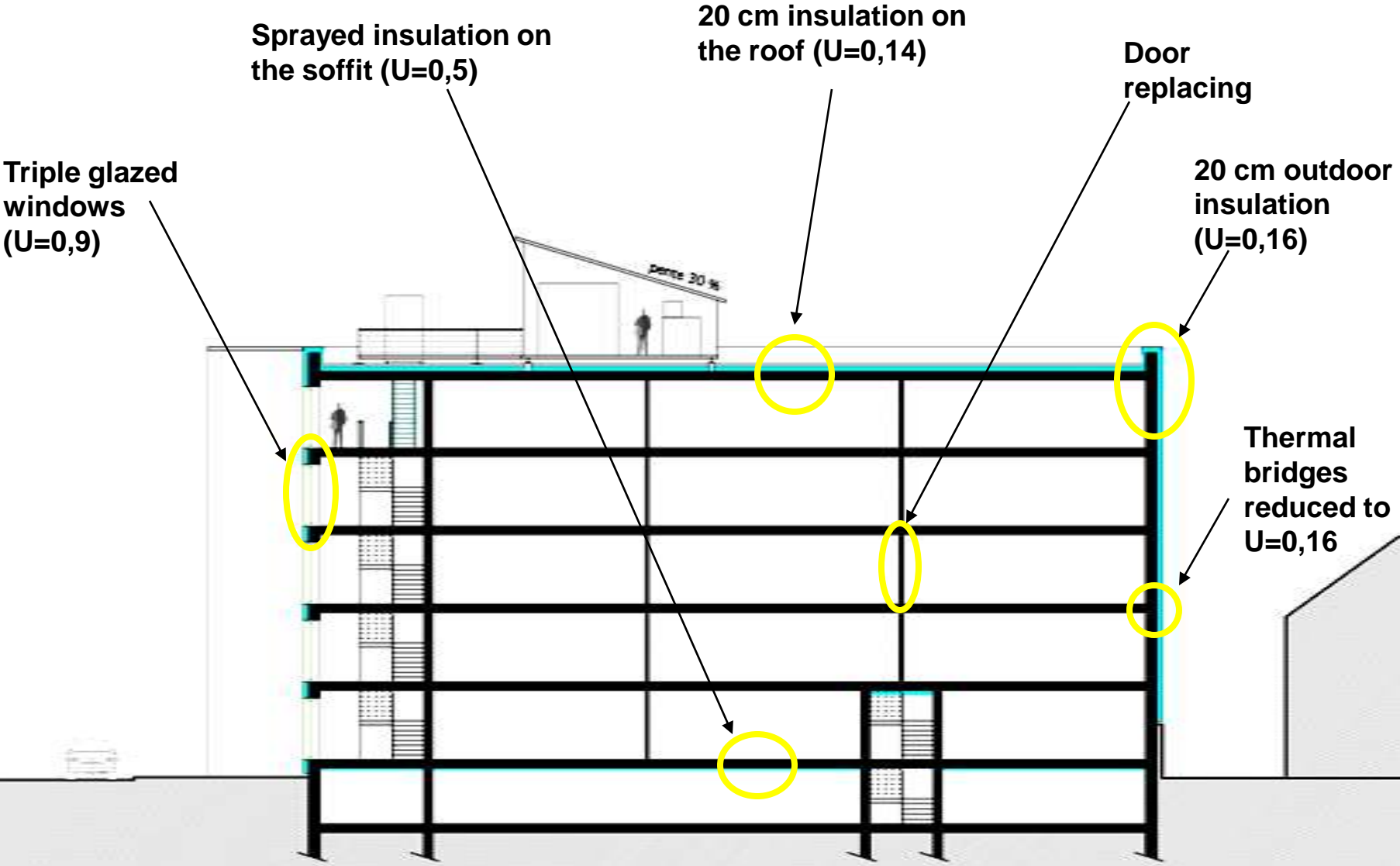


Goals of the retrofitting program

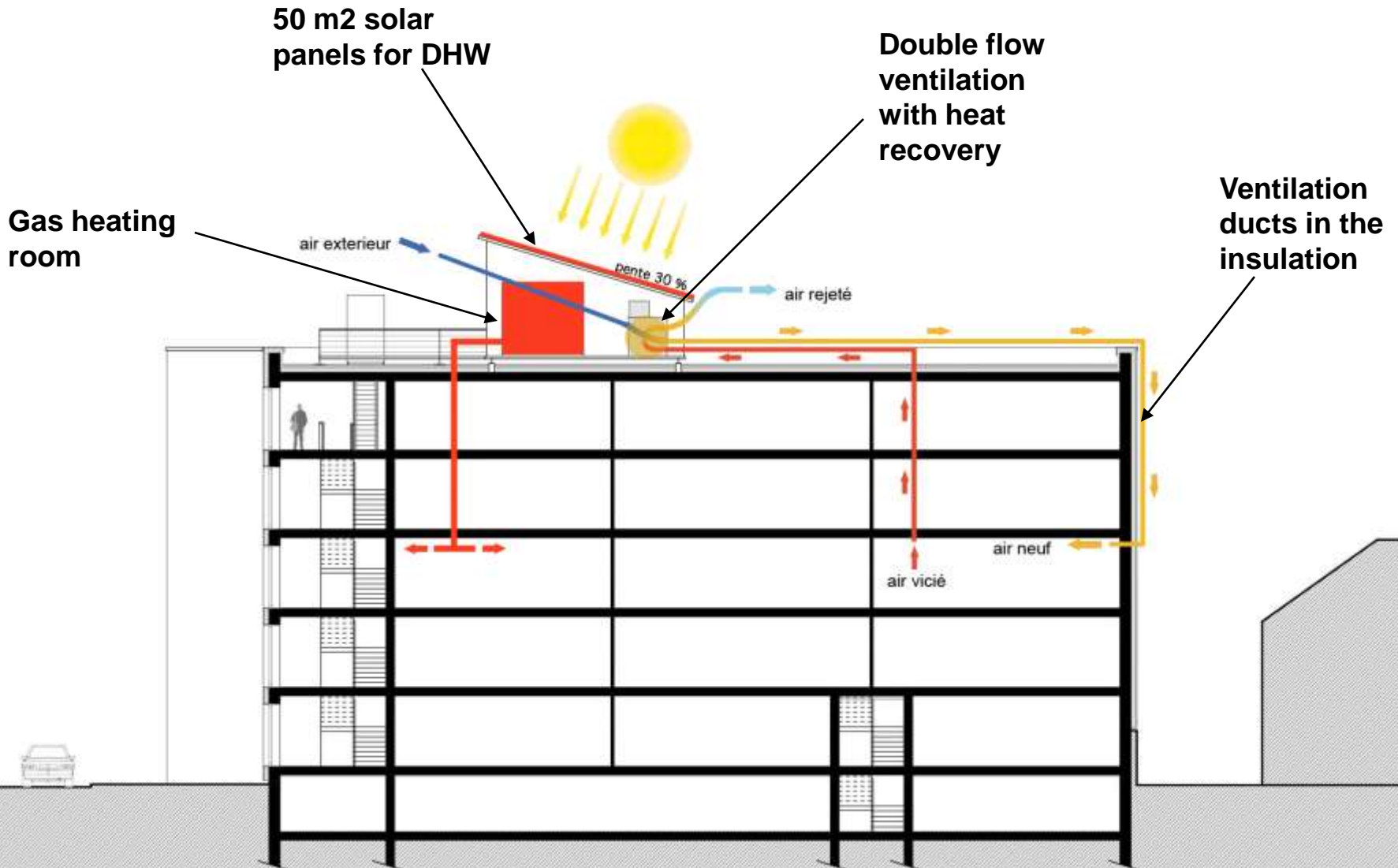


- Reach the 4 factor
- Find a technical and financial reproductability
- Have a first experience

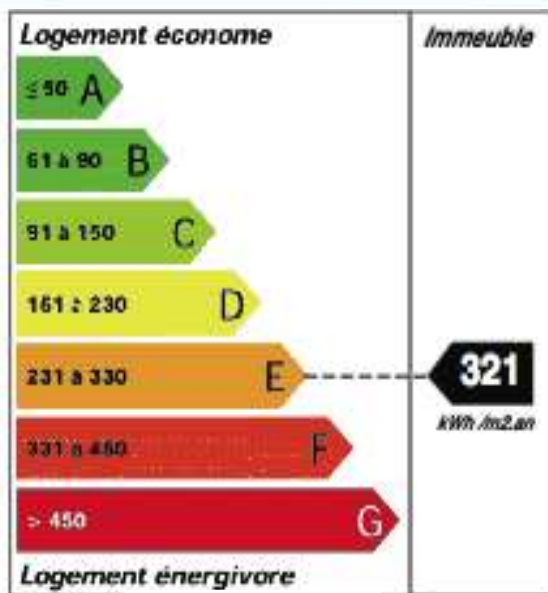
Building envelope ($U_{bat}=0,51, -47\%$)



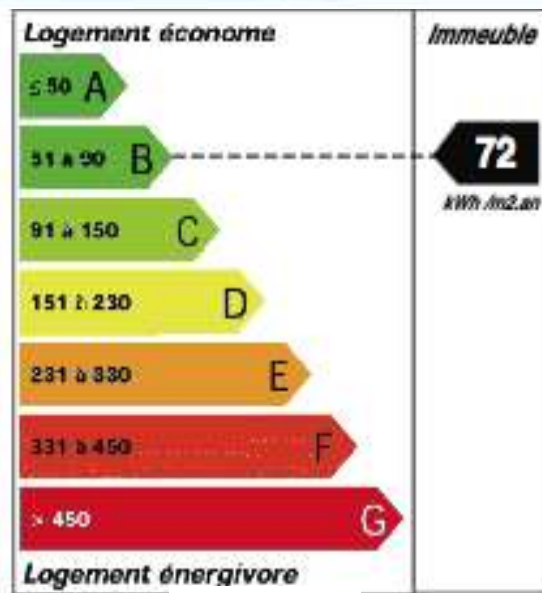
Technical equipments



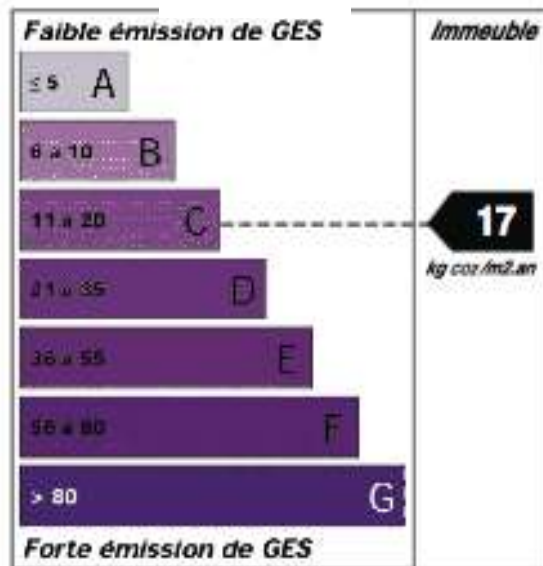
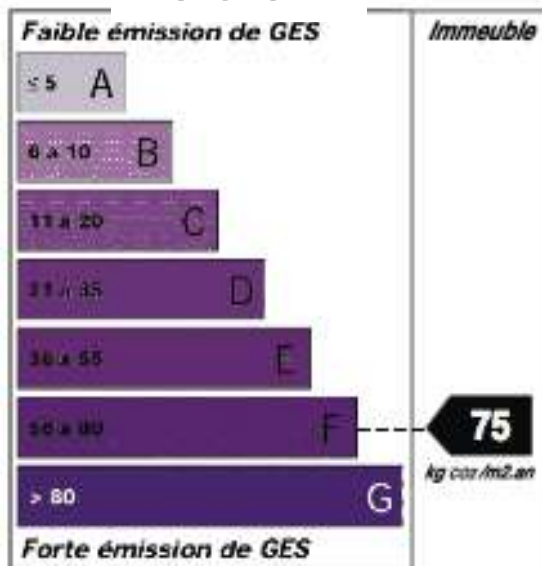
Energy needs and CO2 emissions



Before



After



Envelope: 1 118 000 €
HVAC: 398 234 €
RES: 58 873 €
Others: 193 500 €
Fees: 378 998 €

Total: 2 147 605 €
(70 000 €/dwellings of
work)

Social housing grants:
119 053 €
RUE grants: 310 600 €
RES grants: 34 200 €
OPAC38 own funds:

409 751 €
Loans: 1 124 000 €
Which leads to a 50% rent
increase

Thanks a lot for your attention

www.opac38.fr

