GENERAL INFORMATION		
Name of the public building renovation		La fraternité residence
Building Good Practice number		BGP n°2 – Bordeaux
Social housing sub-group		
Description		
	Address	Avenue Vincent Auriol – 33 270 Floirac - France
	Public sector contractor	Social landlord Domofrance
	Architect Engineering consulting	Architect : Agency Baggio - Piechaud Engineering consulting : CAP INGELEC
	Date of construction	1965
	Legal aspects (e.g.: protected property)	/
	Date of renovation	2009/2012
	Nature of the work (short description)	-Wall external insulation -Strengthening of the flat roof insulation + substitution of waterproofing -Double glazing -Humidity sensitive single flow CMV (Controlled Mechanical Ventilation)

	Budget and source of financing	-Global budget : 2 458 k€ (energy efficiency work : 2 091 k€) -Source of financing : ➢ Eco-loans Caisse des dépôts & consignations : 67% ➢ Europe (ERDF) : 16% ➢ Capital stock : 11% ➢ Regional council of Aquitaine : 6%

AVAILABLE RESULTS	
What were the big problems (in terms of energy efficiency) to tackle?	-To allow dwellers to reduce their energy consumptions. -To act in occupied site. -To enhance the esthetical aspect of the residence. -To install a humidity sensitive single flow CMV in a 14 floors building.
Has this building been already analysed and certified?	Getting the "Energy efficiency PROMOTELEC" label (4 stars quote).
What are the key innovative energy efficiency measures undertaken through the renovation?	Package of work (the whole building envelope + CMV)
What are the measurable improvements in terms of energy efficiency in electricity and heating (kWh saved)? • **kWh saved, kWh before/after, kWh given in the studies/real kWh)** • **carbonated energy kWh substituted by REN** • **kg CO2 saved**	-Before work : ➢ EPC level : E ➢ Building 1 (4 floors – 36 flats) : 232 kWh/m².year ➢ Building 2 (14 floors – 58 flats) : 237 kWh/m².year -After work : ➢ EPC level : B ➢ Building 1 (4 floors – 36 flats): 75 kWh/m².year (- 68%) ➢ Building 2 (14 floors – 58 flats): 63 kWh/m².year (- 73%)

ENERGY EFFICIENT MEASURES	
Energy efficient measures of the building envelope	-Wall external insulation : 14 cm of stone wool / expanded polystyrene (λ= 0,038 W/m.°C, i.e. R =3,68 m^2.K/W) - Flat roof insulation : substitution of the current insulating material by 10 cm of polyurethane foam + waterproofing (R = 4,15 m^2.K/W) -Low-floor insulation – 11 cm of polyurethane foam (R = 4,23 m^2.K/W) -PVC double glazed windows (Uw = 1,6 W/m^2.°C) + PVC roller shutter with internal thermal insulation
Energy efficient measures of the heating system	Any work on the heating system (collective gas boiler).
Energy efficient measures of monitoring energy	/
Energy efficient measures regarding behaviour	-Partnership with the Eco-Citizen Regional Centre of Aquitaine. -Eco-citizen approach concerning water (invoices reading), electricity (playing activities) and selective sorting. -The creation of an instructive flat combined with the test flat: dwellers had the possibility to discover work done in their housing and to get accustomed to eco-citizen behaviours.
Stakeholders' involvement in the energy efficient measures	/
Others?	Low-consumption humidity sensitive single flow CMV.

SUSTAINABILITY OF THE RENOVATION	
Design and choice of sustainable materials?	No but use of materials that have been selected by the social landlord by taking account of their environmental impact.
Sustainable building site management? (sorting waste, water…)	-Clean building site -Recycling of the old PVC windows
Application of a valuation method (BREAM? HQE? Others?) **Carrying out consultation process with dwellers? Concerted choice on the work program? Which external partners?**	/ Dwellers have been invited to information meetings to present them the work project.

BUILDING MAINTENANCE: life of the building after the renovation	
Is the building subject to energy monitoring? Is there a responsible manager?	The social housing organism is responsible of the management of the building. The technical services control energy consumptions.
Who is in charge of the maintenance of the heating system of the building?	A private operator is in charge of the maintenance and of the good results of energy consumptions.
Who is in charge of the day to day energy management?	/
Are there some specific measures to raise energy awareness and to implicate users in energy efficiency?	A monthly newspaper is distributed to dwellers: “Green news”.

FUNDING	
What financing plan?	-Source of financing : ➢ Eco-loans Caisse des dépôts & consignations : 67% ➢ Europe (ERDF) : 16% ➢ Capital stock : 11% ➢ Regional council of Aquitaine : 6%
Innovative or specific aspects in the method of financing (European funds or loan, energy performance contract, ...)	-European funds ERDF - Eco-loans from Caisse des dépôts & consignations
What is the balanced budget for each stakeholder • **Energy costs for tenant before /after** • **Increase in the rent**	After this renovation, the rent didn't increase. There was a large reduction of heating costs.
Is there any specific economical indicators (payback time on investment, global cost, ...)	/

TRANFERABILITY	
Transferable aspects according to the partner in charge of this example of good practice	Transferability of planning (forming a partnership, choosing priorities, setting up a renovation building teams, etc.)? This operation is a part of an ERDF project concerning energy

	efficiency in social housing in Aquitaine region. It is a European project of 15 million Euros, for which around 5 000 housings have been renovated, generating 179 million Euros of work for the local market. Regarding the 35 projects implemented - all big complexes with the same characteristics - we can say that this package of work generates the same levels of costs and efficiency.
	Transferability of the process of renovation (management structure, monitoring system, implication of end users, participation, etc.)?
	Transferability of results (good solutions, adaptability, change of behaviour, etc.)? -Energy consumptions reduction. -Improvement in summer comfort. -The rents didn't increase. -Satisfaction surveys will be distributed to dwellers and will allow to measure rehabilitation operation impact on their day-to-day quality of life.
Transferable aspects according to all the partners of Serpente project	The other partners will analyse and validate these good practices. During the process of validation the partners will take on the role of auditors because they will assess and improve the effectiveness and portability of good practices in their context.
	The validation process will promote a systemic approach in local competent public administrations. Moreover, this process of selection and validation is a peer review and entails the mutual role of experts and auditors depending on typology of buildings and partner's expertise.

SOURCES	
Publications	
Website	
Interviews	Irène SABAROTS – Design engineer – Domofrance